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ISSUE 40

MICROCOMPUTER TIMES™

AMIGA RENAISSANCE

- ▶ **New Directions
At Commodore:**
*Exclusive Interview
With Commodore
President Max Toy*
- ▶ **Plus: Amiga Music,
Medicine,
Programming**

Jan Lewis On
The Information Age

SPECIAL SECTION

Mac @ Work

- ▶ **4th Dimension
Database**
- ▶ **Stepping Out
Screen Extender**
- ▶ **New Macintosh Products**

Max Toy
Of Commodore



How to tell the difference between DESQview™ 2.0 and any other environment.

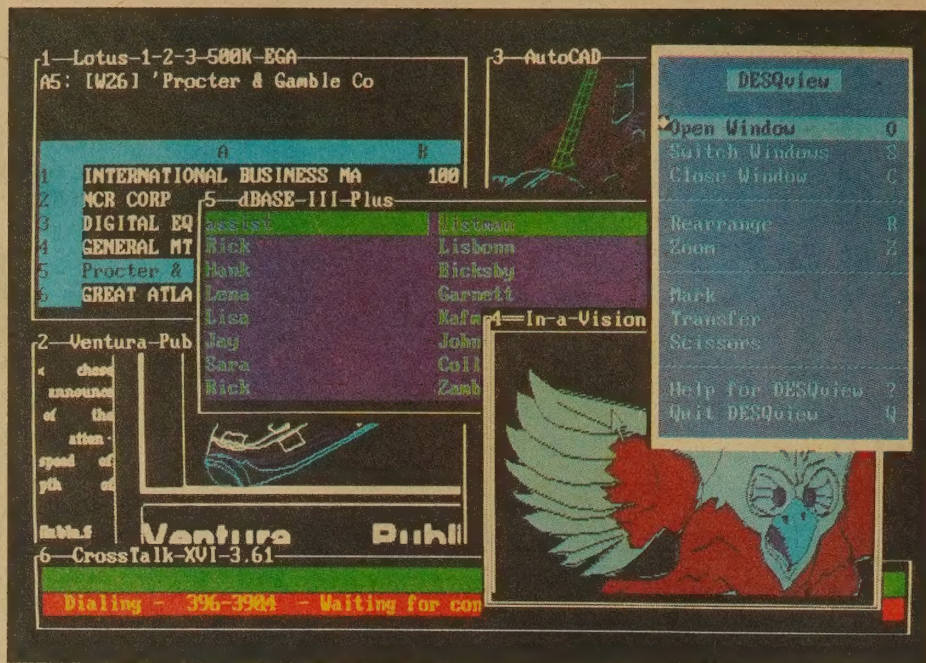
Selecting DESQview, the environment of choice, can give you the productivity and power you crave, without the loss of your old programs and hardware. If you like your existing programs, want to use them together, transfer data between them, print, sort, communicate with or process in-background, yet still have the need to keep in place your favorite PC(8088, 8086, 80286 or 80386), DESQview is the "proven true" multitasking, multi-windowing environment for you. Best of all, DESQview 2.0 is here now, with all the money saving, time saving, and productivity features that others can only promise for the all-too-distant future.

And with DESQview's new graphics enhancements for Hercules, CGA, EGA, and VGA, Version 2.0 still offers the same award winning and pioneering features for programs that earned DESQview its leadership, only now you can also run desktop publishing programs, CAD programs, even GEM™, Topview™, and Microsoft Windows™ specific programs. In some cases you'll add as little as 10-40K to your system overhead. Now you can have multi-tasking, multi-windowing, break the 640K habit too and still get an auto dialer, macros, menus for DOS and, for advanced users, a new complete application programmer's interface capability. No wonder that over the years, and especially in recent months, DESQview, and now DESQview 2.0 have earned extravagant praise from some of the most respected magazines in the industry.

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"A colossus among windowing environments"... "will run almost anything"—PC Week, Marvin Bryan.

"Windows, promises, but DESQview delivers"—MICRO-TIMES, Birrell Walsh.

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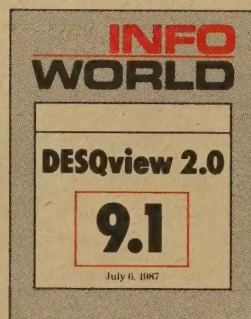
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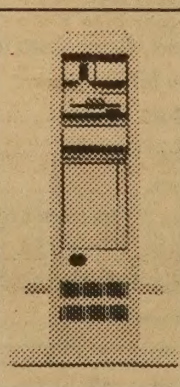
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The Amiga Renaissance

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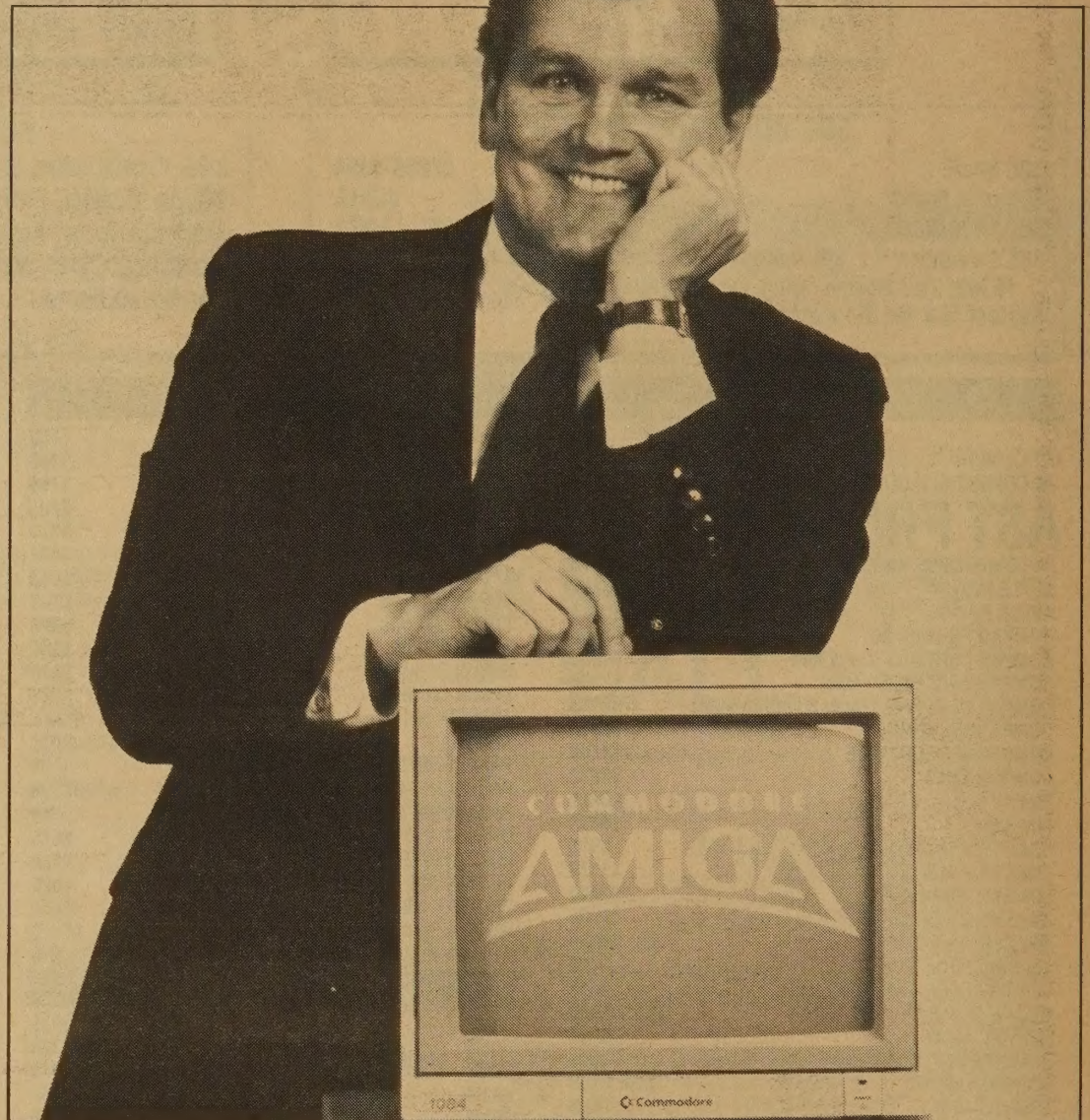
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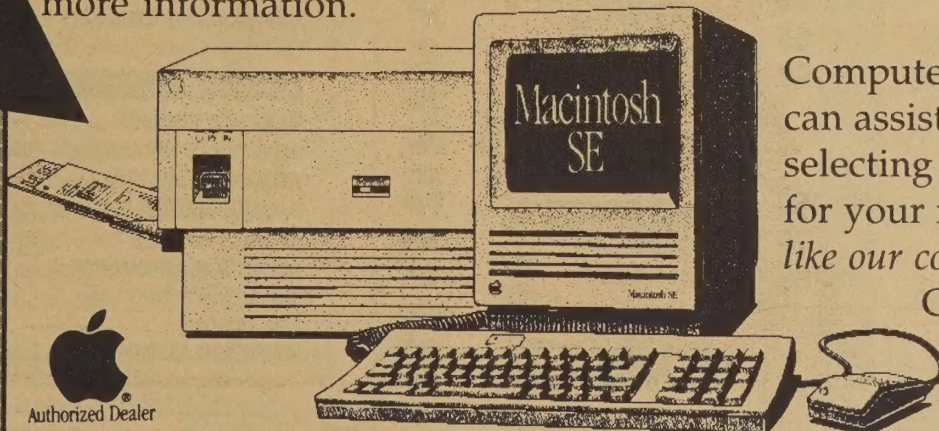
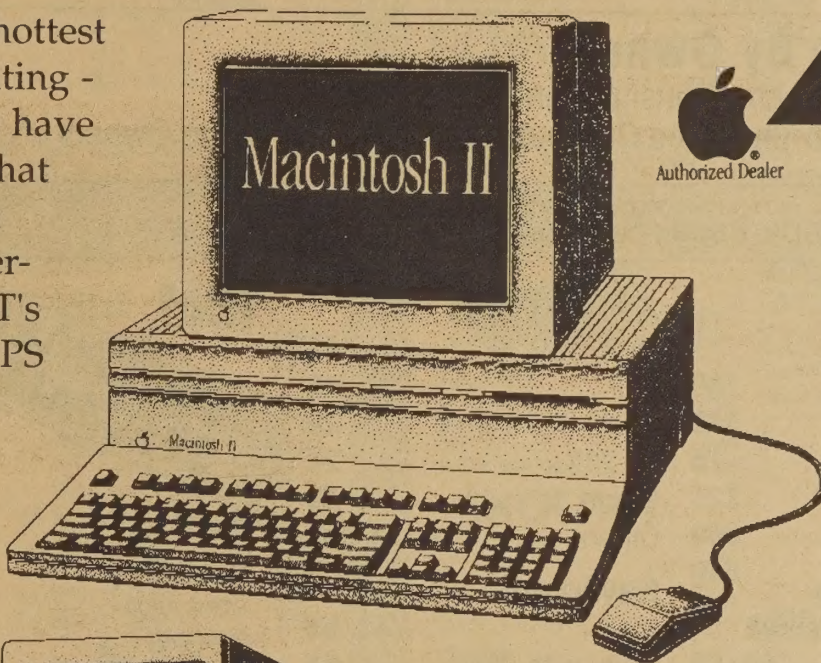
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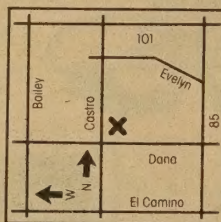
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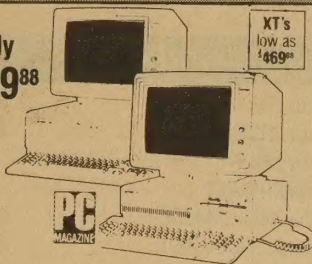
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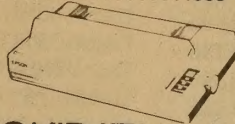
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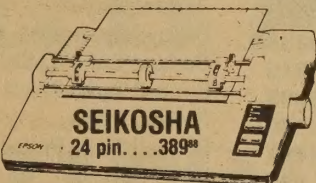
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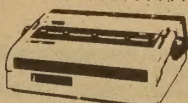
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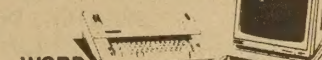
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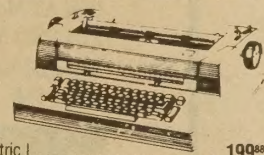
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January 21 The Latest In Desktop Presentation Technology Seminar. Contact Executive Solutions, (415) 562-4801.

January 23 Computer Show And Sale. Fort Mason Center, Pier #2, San Francisco. Golden Gate Shows, (415) 388-8893.

January 23 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

January 23 The Amiga Class: Introduction And Overview. Contact Patrick Bailey at (415) 949-4864.

January 24 Commodore Show. San Mateo County Fairgrounds, San Mateo. RK Productions. (800) 252-7927.

January 25-27 Desktop Publishing Seminar. Sheraton, Fisherman's Wharf, San Francisco. Contact the Technology Transfer Institute at (213) 394-8305.

January 26 Solomon Introductory Computer Associates Seminar. 20111 Stevens Creek Blvd., Cupertino. Call (408) 446-5511 for more information.

January 27 Introductory Solomon III Seminar. 20111 Stevens Creek Blvd., Cupertino. Call (408) 446-5511 for more information.

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February 6 Computer Show And Sale. Solano County Fairgrounds, Vallejo. Golden Gate Shows, (415) 388-8893.

February 8-10 International Conference On Computers And Law. Mirimar Sheraton Hotel, Santa Monica. For further information contact Michel M. Krieger, ICCL88, P.O. Box 24619, Los Angeles, CA 90024. (213)208-2461.

February 8-11 UniForum '88 UNIX Conference. Dallas Infomart, Dallas, Texas. Contact UniForum at (800) 323-5155.

February 13 Computer Mart. De Anza College Campus Center, Cupertino. Contact the Students Activity Center (408) 996-4350.

February 13 Bay Area Computer Swap. San Francisco, Cow Palace. Microshows (800) 433-7469.

February 17-19 Software Development '88. Ramada Renaissance, San Francisco. Contact JoAnn Tingley, Conference Coordinator, Seminar Division, Miller Freeman Publications. (415) 995-2426. Fax: (415) 543-0256.

February 20 Computer Show And Sale. Sonoma County Fairgrounds, Santa Rosa. Golden Gate Shows, (415) 388-8893.

February 20 Amiga Class: Business Applications. Contact Patrick Bailey at (415) 949-4864.

February 22-26 UNIX System Classes; Including Bourne Shell Programming And System V Administration. Holiday Inn, Palo Alto. Contact Berkeley Decision/Systems at (408) 458-0500 for more information.

February 24 Managing The Power Of Information: An Up-To-Date Look At Information Systems. Hyatt Regency, Oakland. Contact AIIM Conference, John Glover, (415) 550-1600.

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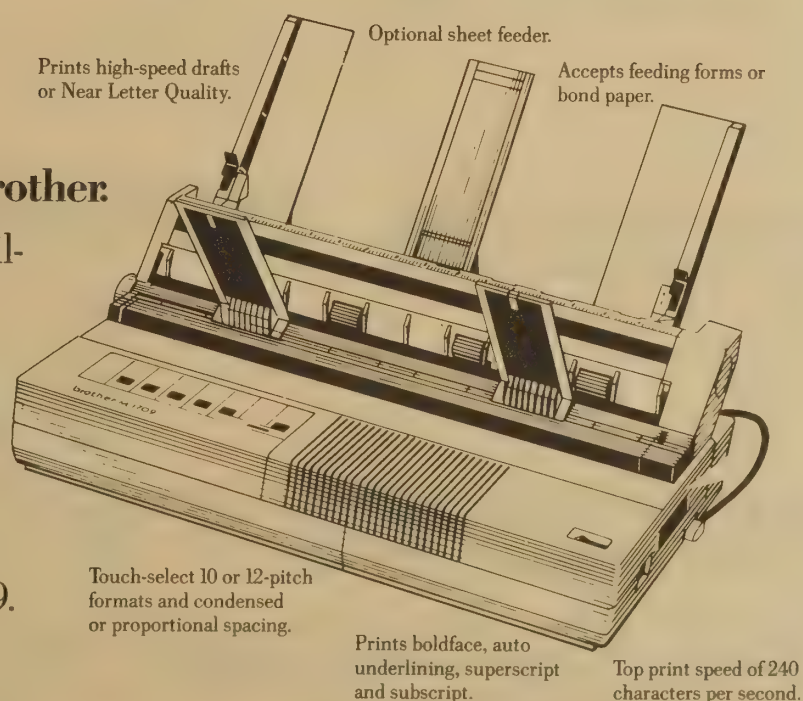
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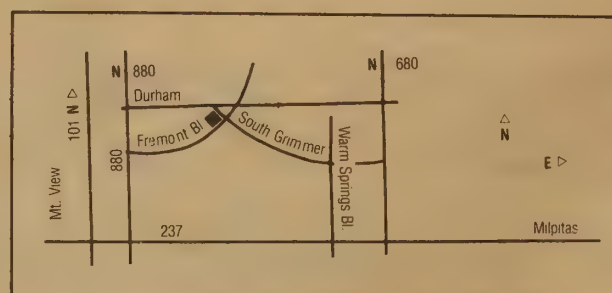
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Calendar of Events continued

February 27-28 Computer Supermarket Show And Sale. San Mateo County Fairgrounds, San Mateo. Microshows (800) 433-7469.

February 29-March 2 Simulation Performance Seminar. Meridian, San Francisco. Contact the Technology Transfer Institute at (213) 394-8305.

March 1-3 Third International Conference On CD ROM. Seattle, Washington. Contact Microsoft, Sherrie Eastman, (206) 882-8080 extension 7213.

March 5 Bay Area Computer Swap. San Francisco, Cow Palace. Microshows (800) 433-7469.

March 7-11 Seybold Seminars '88: Frontiers In Electronic Publishing. Hyatt Regency Embarcadero, San Francisco. Contact Seybold Seminars, (213) 457-5850.

March 17-18 The Western Educational Computing Workshops. Cerritos, College, Norwalk, California. Contact Judah Rosenwald, (415) 338-1212.

March 19 Amiga Class: Music Applications. Contact Patrick Bailey at (415) 949-4864.

March 26 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

March 26 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

March 28-31 World Congress On Computing. Chicago, Illinois. Contact The Interface Group, (617) 449-6600, for more information.

April 7-10 13th Annual West Coast Computer Faire. San Francisco, Moscone Center. Contact The Interface Group, (617) 449-6600, for more information.

April 16 Computer Swap. Santa Clara County Fairgrounds, San Jose. RK Productions. (800) 252-7927.

April 23 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

May 14 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

May 21 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, on the street in February is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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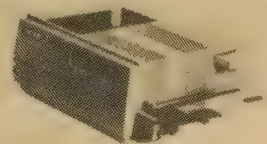
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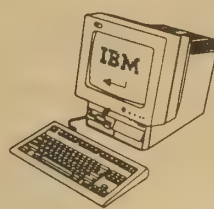
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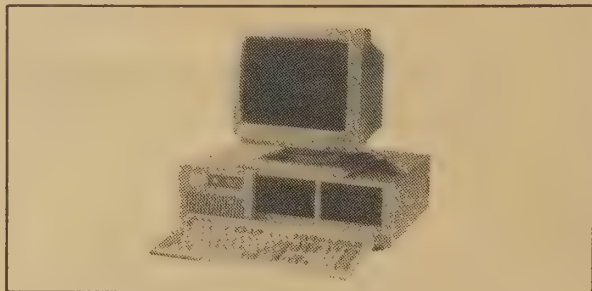
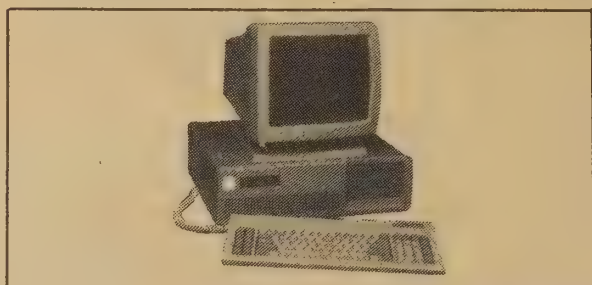
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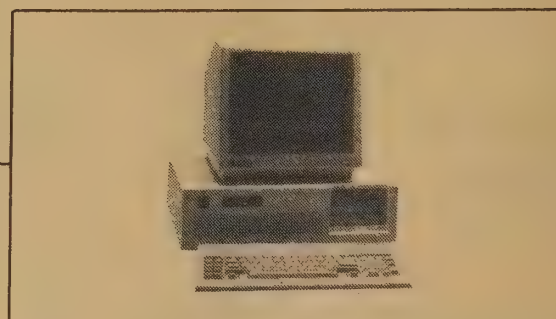
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BUT JAN LEWIS SAYS . . .

The Information Age Comes of Age

If you trace human communication back to the beginning of our species, I believe you will find seven key communication media — seven technological breakthroughs that galvanized change in society by altering the way people communicate with one another. The evolution of our species, one might argue, is shaped by our form of communication, and, in this regard, perhaps, the medium is the message.

The history of human communication unfolds in stages, as new technology makes it possible for new media to emerge. Each of the seven key media represent technologies that democratize information by allowing more people to participate in its creation and/or consumption. And in all cases, the social consequences outlive the technological breakthroughs as they dramatically alter the established political hierarchies.

Let me start by offering a short description of each of the seven media:

- 1) **pictureforms:** including, for example, drawing on cave walls
- 2) **speech;** storytelling; oral history
- 3) **letterforms;** alphabets; writing: everything from The Ten Commandments to the Gettysburg Address
- 4) **printing press;** mass-producible letterforms
- 5) **electronic information:** everything from on-line databases to CD-ROMs
- 6) **imageforms:** including video, film, audio, etc.
- 7) **hypermedia:** tools which change the topology of information

There were several criteria which I used to define the key media. In all cases, the key media have the following in common:

- each makes possible a significant expansion in the reach of information
- each provides new paradigms for conveying and exploring information
- each provides information access to whole new classes of people
- each empowers individuals by democratizing information

What do I mean by democratizing information? Giving more individuals the ability to access and disseminate information. The ideal would occur when all people have equal access to all information. If information

is power, then the story of increasing access to information is a generally unreported story about the distribution of power in the world.

Basically, there are two ways that a medium can democratize information. One way is by increasing distribution, i.e. increasing the physical or logical transporting of the information. The other way is by making the information more usable to a greater number of people.

A medium will become "mass market" only if it satisfies two criteria: it reaches the masses, and the masses know how to use it. This is an oversimplification, of course. It would probably be more accurate to say that the extent to which a medium becomes mass market is a function of the extent to which it physically or logically reaches the masses and the extent to which the masses know how (or figure out how) to use it.

When we think of a revolution, we think of sudden uprisings and rapid change. Likewise, when we think of the information revolution which took place as a result of, say, the printing press, we think of it as a rather sudden event that produced major changes in a very short period.

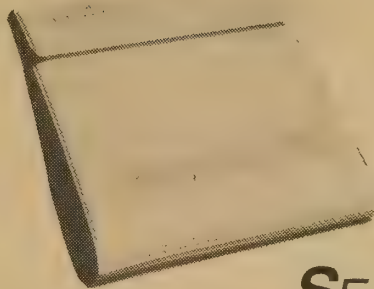
But in fact, the information revolution set off by the printing press didn't reach critical mass for several generations. In the early days of the printing press, most of the population could not avail themselves of books even though they could be "mass produced." In fact, for the average individual, access to the printed word — wasn't realized for almost a century. It was not until the "technology" (literacy) and the "user interface" metaphor (the book) were assimilated into the population that information became democratized via the printed word.

Ted Nelson, the inventor of hyper-text, was once asked whether he believed that information should be reserved for the elite. He answered that he was a "popu-litist." He believes that yes, information should be for the elite, but that everybody should be among the elite. Sounds like a noble aspiration to me.

Are we headed in that direction? We'll try to answer that question next time, when we examine each of the seven key media and the ways that each one produced (or will produce) its own information revolution.

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By Paul Hoffman

Microrim Announces New SQL Version of R:BASE for MS-DOS and OS/2

Heating up the race for the SQL database market, Microrim announced the next version of R:BASE for both MS-DOS and OS/2. The OS/2 announcement was one of the first official announcements of a major OS/2 product, and is sure to put Microrim in a good position for competing with IBM's Extended Edition. Microrim has long been considered the leading competitor for Ashton-Tate's dBASE III, and the new announcement will boost Microrim's exposure in companies that intend to convert early to OS/2. Both the MS-DOS and OS/2 versions will be available in the first quarter of 1988.

"Our OS/2 version is already running 20% - 30% faster than the MS-DOS version, and we are really happy with the performance improvements we are seeing with OS/2," said Fred Gray, vice president for research and development. "The virtual memory is really going to come through for OS/2 users." The MS-DOS version now supports the Lotus-Intel-Microsoft Expanded Memory Specification, so it too can take advantage of extra RAM memory available. Both versions will be able to exchange data, and will also be able to read data from earlier versions of R:BASE.

Although the MS-DOS version of the new R:BASE will be available first, the OS/2 version will follow shortly after. When asked why the OS/2 version would be later than the MS-DOS version, Gray replied, "IBM released OS/2 sooner than anyone expected." He said that although development was progressing well, Microrim began working faster when IBM announced at COMDEX that it would begin shipping OS/2 on December 4 (which it did).

R:BASE will fully support multitasking under OS/2, according to Gray. You can run a large report in one partition and continue to update the data base in another. Unlike some OS/2 programs previewed at COMDEX, R:BASE will allow you to run the program in each partition. Without this, you could only perform one R:BASE task at a time. With full partition support, however, you can run R:BASE once, perform a long sort, and start it again while the sort is still running. R:BASE has full concurrency control and automatic or explicit locking of data.

Many database manufacturers have adopted SQL due to both its popularity and IBM's announcement that it will be the data language used in its forthcoming OS/2 Extended Edition. The extended edition will only be available to people running IBM computers, and many large corporations bought both IBM PCs and clones. These corporations will be looking for the best implementation of SQL to run on the non-IBM machine, and maybe some of the IBM machines as well.

"I don't think Extended Edition will dominate the OS/2 market," claims Gray. "IBM's implementation is only an engine. We provide not only an engine, but also a full development system and easy-to-use interface. That means a great deal to most OS/2 users." R:BASE's interface to SQL is an interactive package that uses prompt-by-example technology. As you give more examples, the system remembers what you meant so that it can structure your queries more easily. Advanced users can also enter SQL queries directly.

Microrim is offering R:BASE for DOS as an upgrade to R:BASE System V. The suggested retail for R:BASE for DOS is \$725; a price for R:BASE for OS/2 has not been established. Microrim, 206/885-2000.

Oracle To Announce 1-2-3 Connection Soon

Oracle Corporation is expected to announce a structured query language (SQL) add-in for Lotus 1-2-3 in the near future. The add-in will enable 1-2-3 users to access SQL databases without leaving 1-2-3. In addition, users will be able to import and export 1-2-3 data to the databases. Oracle is known for its MS-DOS extending architecture, which is required due to the size and complexity of SQL and the memory limitations of MS-DOS. It is expected that such an extension will be required for the 1-2-3 add-in. Oracle is also expected to release an OS/2 version of its SQL system in the near future. Oracle, 415/598-8000.

Microsoft Issues Patches To Bad C Compilers

After proudly releasing its new version of its C compiler and new low-cost compiler, Microsoft has had to update both products due to bugs. Some users of the new Quick C package found that after using the package, they could no longer access files on their hard disks. Microsoft discovered that Quick C used some instructions that caused users of older Western Digital hard disk controllers to lose all the files on their disks. The controllers have ROM chips labelled "EPROM #62-000043-010," which can be replaced by calling Western Digital at (800) 847-6181, extension 3400. Other users who upgraded from version 4 of the more expensive C compiler to version 5 found that many programs that ran fine after being compiled under the old version had errors when compiled under the new version. Microsoft is addressing those problems as well. Microsoft, 206/882-8089.

Texas Instruments Settles Suit Against Samsung

In one of the largest chip patent suits ever brought in this country, Texas Instruments (TI) finally settled with the last of the Asian chip makers which it accused of unlawfully using its patents. Samsung, a major Korean manufacturer, will now pay TI royalties on all dynamic RAM (DRAM) chips it exports to the United States. TI is expected to make over \$300 million in royalties in the next few years as a result of the settlements in the patent suits it brought against Japanese and Korean DRAM manufacturers.

IBM Sells Last Of Intel Stock

In a move designed to keep both the European IBM investors and its financial advisors happy, IBM sold the last of the 19 percent stake it had in Intel earlier this month. Although this is unlikely to have much of an effect on Intel, since the stock

was bought up by other institutional investors, it does signal an end to what many thought was an unusually tight bond between IBM and a major supplier that began four years ago. IBM began selling off the stock earlier this year. IBM held the remaining stock until now due to an agreement it made with European investors who bought debentures that could be converted into Intel stock. Since all the machines in IBM's personal computer line (except the PC RT) use Intel chips as their central processing units, it is unlikely that this selling of stock indicates any displeasure with Intel.

Motorola Developing RISC Chip, May Compete With Sun

Motorola sources confirm that they are working on a reduced instruction set computer (RISC) chip, and that the chip has been under development for at least a year. Murray Goldman, a senior vice president at Motorola, mentioned the chip at a computer industry conference last month. Motorola sources indicate that the chip will not be compatible with Motorola's main-line 68000 family of CPUs, and that the company is spending \$10- to \$20 million a year on research and development of the chip. If Motorola releases such a chip, it would compete with Sun Microsystems' SPARC chip, which is already receiving wide interest in the industry. Since RISC technology is fairly new, most manufacturers are using current CPU technology while ramping up RISC chip production. In fact, the majority of Sun's workstations use chips from the Motorola family.

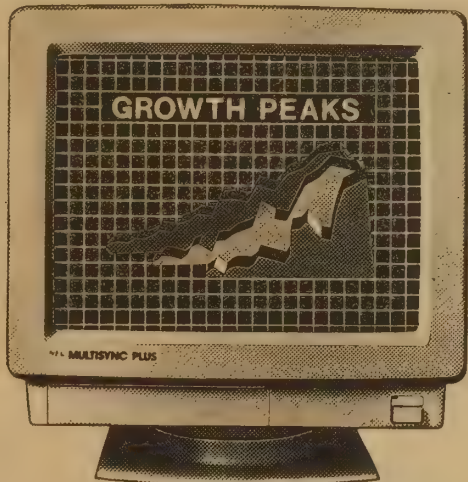
GE To Develop And Manufacture Chips For IBM

IBM and General Electric announced an agreement in which GE will create and make application-specific integrated circuits (ASICs) for IBM. The news came as a surprise to many industry observers, since GE is currently a minor player in the chip industry. GE recently acquired a large chip design and manufacturing facility when it bought RCA, and many observers assumed that it would sell the facility to concentrate on other businesses. GE indicated that it expects that the fruits of its research for IBM would make it a more important chip manufacturer, especially for automotive components.

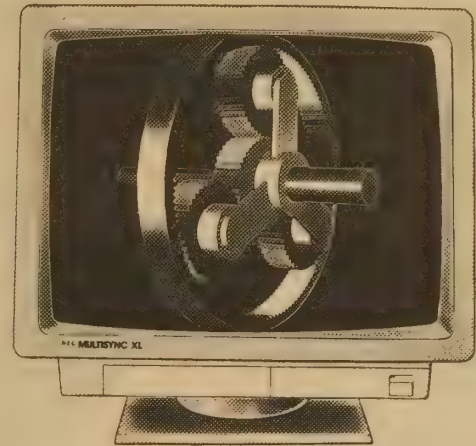
Control Data To Give A Supercomputer To A High School

The ETA Systems division of Control Data has announced its intention to donate the use of a \$1 million supercomputer to the winner of a new contest. The contest, called SuperQuest, challenges junior high and high school students to come up with the most interesting problem and proposed solution to a problem that requires intensive numerical calculation. The winning school will have use of the ETA 10P for two years at

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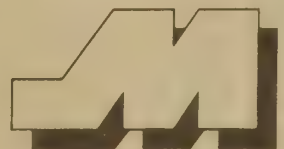
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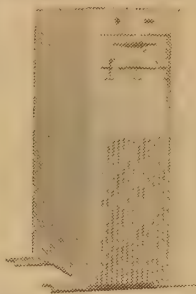
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 (for 1.2MB/720K/360K floppy)
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CDC's expense. According to ETA's president, Carl Ledbetter, "We need something that galvanizes U.S. interest in science like Sputnik did."

Borland Hires VP From Microsoft; Microsoft Sues

Rob Dickerson, Borland's newly-hired vice president of product management, was sued by his former employer, Microsoft. In November, Dickerson left his position of group program manager for Microsoft's languages division. A few days later, Microsoft sued him and obtained a temporary restraining order barring him from working for Borland until early December. Borland and Dickerson then counter-sued Microsoft. The two companies finally settled their disputes with an agreement as to which Borland products Dickerson could work on for the next nine months: he is essentially barred from working on Borland programming language products that compete with Microsoft languages, such as C and BASIC. There is also a six-month moratorium on either company hiring away top executives from the other company.

Lucid Announces Common Lisp For 80386 Systems

Lisp, the language of choice for most artificial intelligence (AI) programmers, is now available for PCs based on the 80386. Common Lisp, which is commonly run on high-end workstations, is the base for many commercial AI applications that can be ported easily from one system to another. Lucid Common Lisp/386 will initially only run on Compaq 386-based computers. It comes with a Lisp development environment including an interpreter, compiler, debugger, and editor. It works with the 386/ix UNIX System V Version 3 operating system from Interactive Systems. Lucid, 415/329-8400.

Lotus Is Back In Court, This Time Suing An Advertising Agency

In an unusual trade-secrets case, Lotus Development Corporation is suing an advertising agency, Rossin, Greenberg, Seronick and Hill, for allegedly attempting to sell its marketing plans to Microsoft, a major competitor of Lotus. The suit claims that the advertising agency offered confidential Lotus information to Microsoft in an attempt to lure Microsoft as a client. According to Lotus, Microsoft showed Lotus the letter with the offer, prompting Lotus to attempt to get an injunction and to sue the firm for unspecified damages. The Lotus marketing information was allegedly obtained by the advertising agency's employees in previous jobs at one of Lotus' advertising agencies. Neal Hill, president of the agency in question, immediately denied the charge saying that it was "absolutely false and without merit," and that he would "aggressively fight the charge."

Sony To Produce NEWS At San Diego Plant

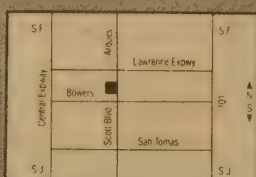
Sony, one of Japan's largest manufacturers of computer and electronic equipment, announced its intention to produce its new 32-bit UNIX computer in its San Diego plant. The NEWS color workstation has rapidly become the workstation of choice in Japan due to its advanced software and low price. The Japanese version is faster than a Macintosh II and features two 68020 CPUs and a 68881 math co-processor, running at 16.67 MHz, which is considered to be extremely fast compared to American workstations in the same price range. Software included with the workstation includes

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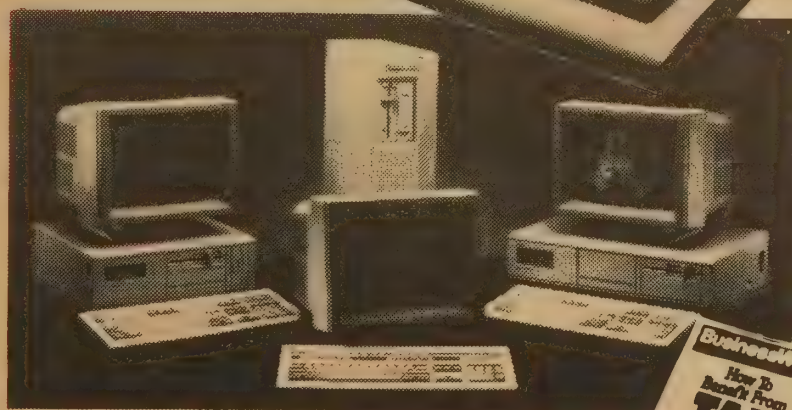


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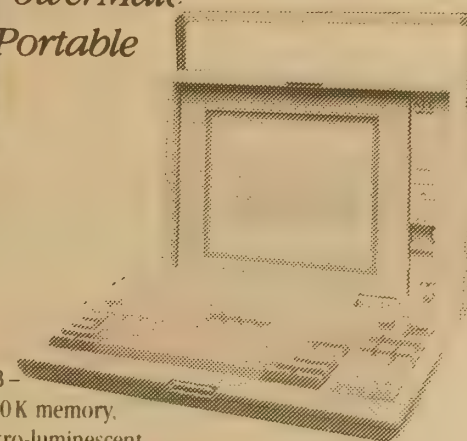


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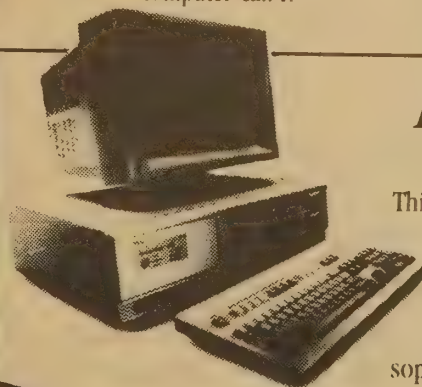


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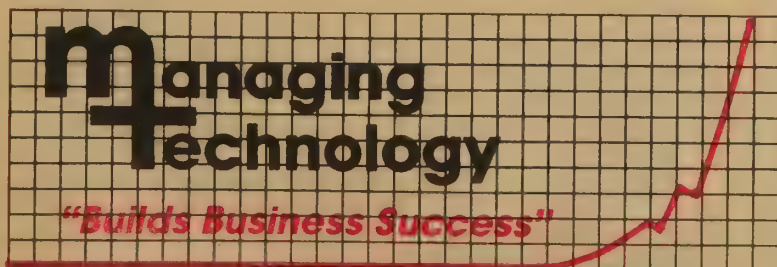
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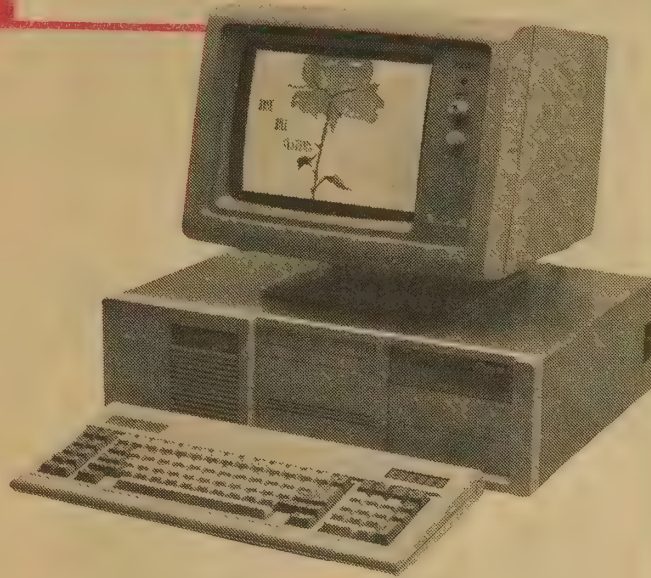
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Berkeley 4.2 UNIX, NFS, X Windows, and the EMACS editor. By producing the workstations for the American market in San Diego, Sony can avoid the high tariffs for off-shore manufactured products. With the workstation race between Sun, Apollo, and Apple heating up, Sony's system should meet stiff competition but also help bring down prices on the higher-end systems.

California Assembly Committee Will Reconsider Data Bill Of Rights

The Elections, Reapportionment, and Constitutional Amendments Committee of the California Assembly will hear a reconsideration of a constitutional amendment to give electronic communications the same rights and responsibilities as written and spoken words. In addition, the bill would protect the data stored in computer data bases in the same manner as other personal property. The bill, ACA 36, was defeated last August in the Elections Committee, but the committee agreed to hear the bill again this month. The bill, considered to be stronger than the current federal protection, is supported by the California Trial Lawyers Association, the American Civil Liberties Union, and many law enforcement agencies.

New Group Forms To Combat International Software Piracy

The Business Software Association, a new group of major software vendors, would like to put all the software pirates in other countries out of business, if not behind bars. The initial focus of the group is to prosecute pirates, particularly the flagrant pirates in Asia, who sell unauthorized copies of American software products at vastly reduced prices. A common practice in many countries is to take a package that costs more than \$500, copy the diskettes and photocopy the manual, and sell the bundle for \$10. The BSA's members hope to put pressure on the pirates and their countries with political pressure from the U.S. and legal proceedings. Initial members of the group include Apple, Ashton-Tate, Autodesk, Lotus, Microsoft, and WordPerfect.

ADAPSO Intends To Play Hardball With IBM Over Trade Practices

The leading mini- and mainframe software manufacturer's trade group, ADAPSO, has been grumbling for many months about the settlement of the IBM-Fujitsu trade secrets lawsuit. In the settlement, Fujitsu was given access to some of IBM's source code; however, the source code is not available to any other software manufacturer. ADAPSO has been discussing the settlement for many months, and ADAPSO president Jay Goldberg recently said that IBM's actions "have created a consensus" to mobilize ADAPSO. Recently, ADAPSO began meeting with members of the anti-trust section of the Justice Department and with officials of the European Economic Community about IBM's trade practices. According to Goldberg, "I'm not hopeful we won't have to escalate the conflict." The "code wars," as they have become known, revolve around IBM's policy of not releasing source code to its operating system products, which it used to do.

New Infocom Game Makes You Watson To Sherlock Holmes

Infocom's newest interactive fiction game, Sherlock: The Riddle of the Crown Jewels, puts the

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player in Victorian England, trying again to foil yet another diabolical plan from Professor Moriarty. Instead of playing the role of the immortal sleuth, however, you play Watson, getting whatever information and shrewd ideas you can from Sherlock Holmes as you solve the puzzle. Versions of the game for the Atari ST, Amiga, Apple IIGS, and Macintosh, have high-quality sound for many of the parts of the game. Infocom, 617/492-6000.

Brazil Comes Under Fire From Congress And Manufacturers

Brazil's stiff law restricting importation of software and hardware may get the financially beleaguered country in trouble in the near future. Six senators, including both California senators Alan Cranston and Pete Wilson, have introduced a bill to take action against Brazil for abrogating its bilateral trade agreement with the U.S. The bill is strongly supported by the Software Publishers Association, a group of 260 microcomputer software manufacturers. Autodesk, manufacturers of AutoCAD, recently pulled out of the country in response to the government's refusal to allow distributors to sell AutoCAD. Brazil's Informatics Law, designed to help Brazil's computer industry, has been used to keep major international companies out of Brazil. According to Jim Michler, manager of international sales at Autodesk, "The Brazilian press has estimated that about 40% of all CAD software used in Brazil consists of illegal versions of AutoCAD." Six leading Brazilian hardware firms were recently denied permission to license MS-DOS from Microsoft under the law. Software Publishers Association, 202/452-1600; Autodesk, 415/332-2344.

Hewlett-Packard To Announce New Low-Cost 300 Dot Per Inch Inkjet Printer

Next month, Hewlett-Packard is expected to announce a new 300 dot per inch inkjet printer. The new printer, which produces print quality nearly as good as laser printers, will be approximately the same size as a dot-matrix printer, will use standard paper, and will be almost silent in operation. The expected price will likely be under \$1,000, according to sources at Hewlett-Packard.

Autodesk To Give Away Software To Programs Training The Disabled In CAD

If you are a non-profit educational organization teaching physically disabled people how to use computer-aided design (CAD), you may be eligible to receive free AutoCAD and AutoSketch software. CAD is useful for disabled people learning a new marketable skill, and for architects and designers

Correction:

In our January issue, our MicroTimes 100 listing of industry leaders erroneously described Mr. Tom White as the Chairman and CEO of Seybold Seminars.

Mr. White is the Chairman and CEO of Santa Clara-based Infonetics, formerly known as The Seybold Group. Seybold Seminars is based in Malibu, and there is no affiliation between the two organizations.

We sincerely apologize for any inconvenience to Infonetics, Seybold Seminars, their clients and our readers that has been caused by this misunderstanding.

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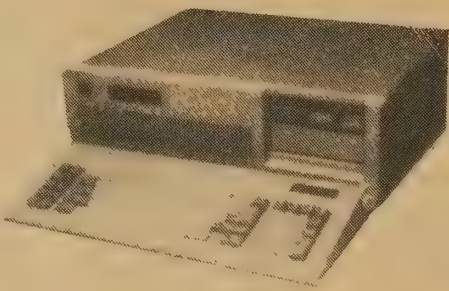
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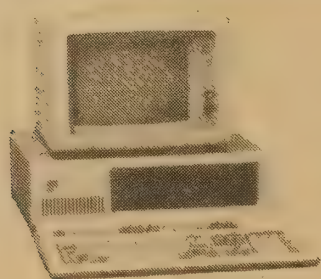
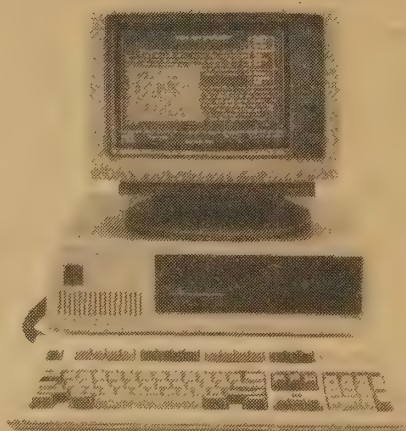
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who have been injured but want to continue to work. Autodesk is accepting applications from non-profit and educational institutions that are teaching CAD usage to the disabled. The deadline for submission is January 31, 1988, and the awards will be announced in February. Autodesk, 415/332-2344, extension 247.

Microsoft Announces Arabic Version Of MS-DOS

Noting rapidly growing use of computers in the Arabic world, Microsoft has announced that it will soon release an Arabic native-language version of MS-DOS 3.3. The operating system, created with assistance from Alis Technologies, handles all the difficulties of the Arabic language such as right-to-left writing, context-dependent letter shaping, and processing Hindu numerals. It uses Alis Technologies PLASMA (Presentation Layer Algorithm for Screen Management Arabization) technology. The package includes Arabic printer drivers for many dot matrix and laser printers. Microsoft's user manuals have also been translated. Arabic MS-DOS will be available to manufacturers from Microsoft and in packaged form from Alis Technologies. Microsoft, 206/882-8080; Alis Technologies, 514/738-9171.

Major Japanese Diskette Maker Opens First North American Plant

Kao, one of Japan's large diskette manufacturers, announced that it had opened the largest 3.5 inch floppy manufacturing plant in Ottawa, Canada. The new plant is expected to produce 150 million diskettes per year by 1991, according to Kao. Currently, the plant is making two million disks per month, and this number will double within a year. Kao expects that 75% of the disks will be used in the American market. Since both the Macintosh and the new IBM PS/2 computers use 3.5 disks only, the demand for these disks is expected to increase rapidly for at least five years. Kao has specialized in the 3.5 inch market in its American operations, with over 80% of its current American product shipments being 3.5 inch disks. Kao, recognized in Japan as more of a chemistry technology company than as a manufacturer, is known for its emphasis on using its own materials whenever possible in its disk-making technologies. Kao, 415/965-4188.

Claris Moves Out On Apple, Begins Using Its Own Name

Apple's software spinoff, Claris, moved out of Apple offices and into its own offices in Mountain View last month. As part of Apple's attempt to show that the ties between it and the software company that it wholly-funded and seeded with its best software applications, Claris moved out of Apple's offices and began its own manufacturing and distribution. In addition, Claris announced that it will begin marketing products under its own name instead of Apple's, and would remove the Apple logo from the products. It is likely, however, that most people will still associate Claris' products such as MacWrite, MacPaint, MacDraw, and AppleWorks with Apple and not Claris. Claris is still actively pursuing new software products from other vendors. Claris, 415/960-2790.

Epyx Granted U.S. Olympic Team License

Epyx recently became an official licensee of the 1988 U.S. Olympic Team, and announced the release of the winter edition of *The Games*, its popular sports series. Part of the proceeds from the

game will support the U.S. Olympic Team. The game, which features TV camera-angle points of view, was designed with the help of the U.S. Olympic Team affiliates, as well as from videotapes from the U. S. Olympic Committee. Other new sports titles from Epyx include a baseball simulation called *Sporting News Baseball* that is based on statistics from *Sporting News*, and was developed under a license from the Major League Baseball Players Association. Other new action game announcements include: *4x4 Off-Road Racing*, the first off-road racing game; *Street Sports Soccer*, where you play on realistic fields such as a slippery public park field or in a city street; and *L.A. Crackdown*, where you attempt to bust drug dealers. They also announced *Home Video Producer*, a tool that lets you add special effects and text to videos shot with a camcorder. Epyx, 415/366-0606.

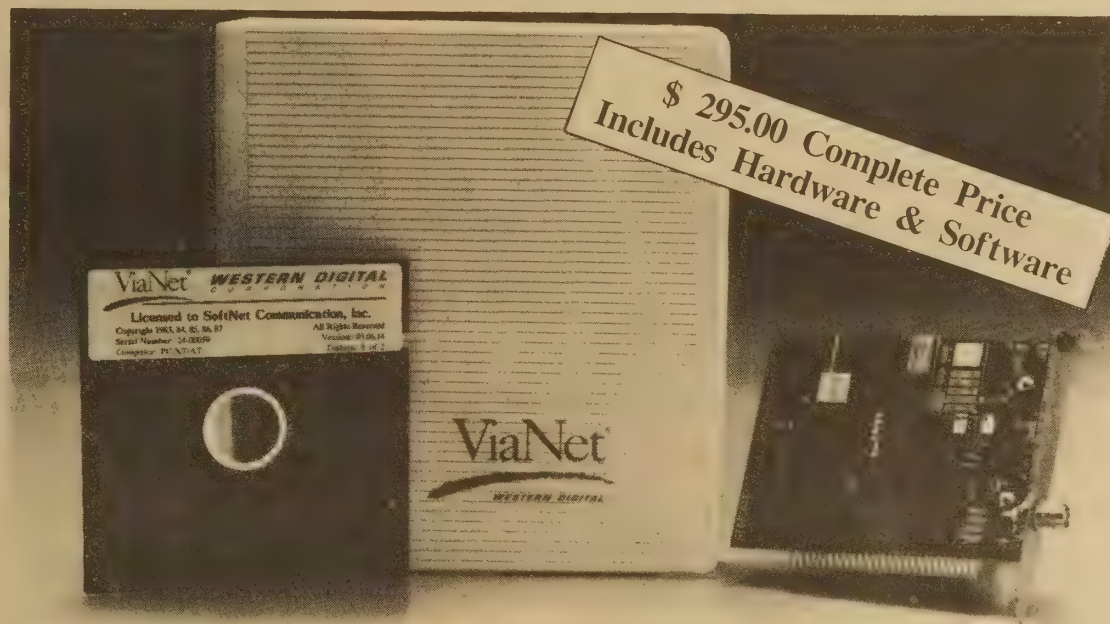
Avantek Sues Former Employees For Misappropriation Of Trade Secrets In Chip Manufacture

The software industry is not the only one where litigation against former employees is becoming more common. Avantek, a major supplier of chips and systems for the microwave electronics market, has sued Celeritek for misappropriation of trade secrets. According to the suit, the founders of Celeritek are former Avantek employees who began a firm that competes with some of Avantek's products. The suit further alleges that Celeritek, while assuring Avantek that they would not use any trade secrets in their manufacturing, used proprietary methods for making gallium arsenide (GaAs) transistors. Avantek, 408/970-3028.

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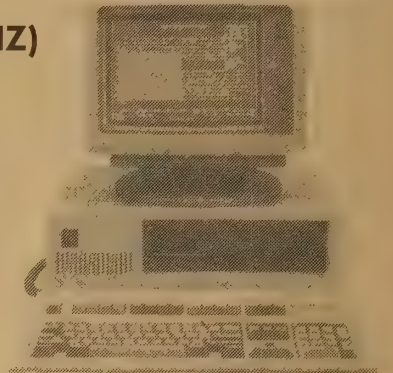
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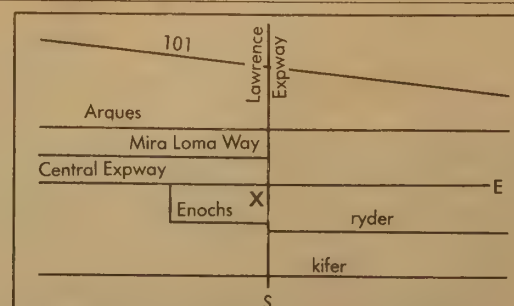
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BUSINESS AND PRODUCTIVITY —MS-DOS

Last Month		December	
1	1	WordPerfect	▲▲
—	2	Managing Your Money	▲▲
3	3	Carbon Copy Plus	▲
2	4	Dac-Easy Accounting	
4	5	FormTool 2.0	
—	6	MathCAD	▲▲
—	7	Turbo Pascal 4.0	▲
6	8	PrintMaster Plus	
7	9	WordPerfect Library	
11	10	Mirror II	
—	11	Turbo C	▲
13	12	dBXL	
10	13	Sidekick	
8	14	Cruise Control	
—	15	Tornado Notes	

UTILITIES—MS-DOS

Last Month		December	
1	1	Norton Utilities Advanced	▲▲
—	2	Disk Technician	▲▲
3	3	Disk Optimizer	▲
6	4	Sideways	▲
5	5	Mace Utilities	
13	6	Desqview	▲
8	7	Direct Access	▲
2	8	XTree	
—	9	XTree Professional	▲
10	10	SeeMORE	
9	11	Print Q	
—	12	COREfast	
—	13	Norton Commander	
4	14	Norton Utilities 4.0	
15	15	Q Dos II	

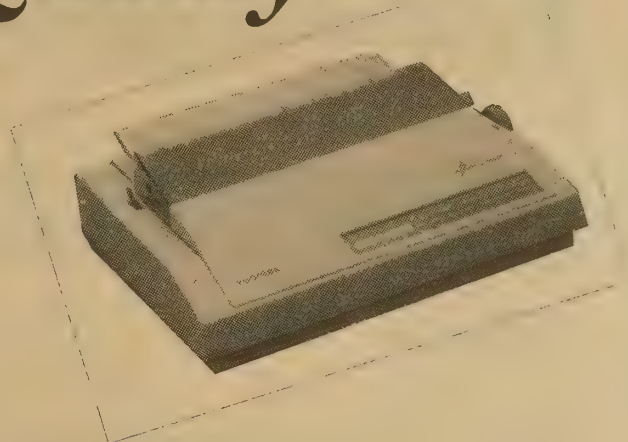
MACINTOSH

Last Month		December	
2	1	Superpaint	▲▲
1	2	MacMoney	▲▲
10	3	Dark Castle	▲
6	4	McMax	▲
8	5	More	
7	6	Acta	
5	7	Stepping Out	
4	8	Silicon Press	
9	9	Smart Alarms	
—	10	Tempo	

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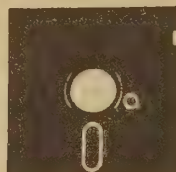
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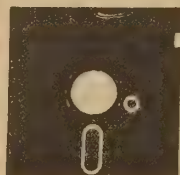
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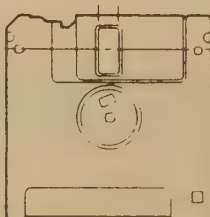


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MUSIC SOFTWARE

Jam Session

By: Brøderbund Software

For: Macintosh with at least 512K of memory.

A second disk drive and external amplification are optional.

List Price: \$49.95

Reviewed By: Robert Beauchamp

A lot of people never take up music because it's simply too intimidating to put in the hard work and acquire the skill necessary to master an instrument. Even if you do master that instrument, who are you going to jam with? When was the last time you sat down with the gang from the brass section of the high school orchestra and really let that French horn wail?

Brøderbund Software has just released a product for those who like music, and like to make music, but just haven't been able to. *Jam Session* requires absolutely no prior knowledge of music, yet in seconds the user can be improvising riffs along with a smokey coffeehouse jazz combo or wailing on electric guitars complete with distortion and feedback.

And it's a blast.

Everybody says the best thing about *Jam Session* is that you can't make a mistake. Every key on the keyboard plays a note or a sound effect in perfect tune to the background music. But what's really the best thing is that the user can enjoy music and be part of the creative process — and still have an unadulterated good time.

Jam Session is one of those programs that makes people drop their jaws in amazement. They just can't believe what they see. On the screen is a group of musicians "playing." When you push one of the fiddle buttons, the fiddle player moves the bow across the strings. The tunes you play along with are fun, catchy and upbeat. People can't resist it.

Jam Session consists of 19 original instrumental songs ranging from classical piano music, to reggae to techno-pop. Each song features one of four "bands," a classical pianist with a snoozing audience, a heavy metal group a la Van Halen, a laid back rock band, a jazz combo and a country band complete with barn, haystack and clucking chickens.

Although you don't need any musical training to play *Jam Session*, it has certain features that will appeal to those who do. It comes with a built in synthesizer and the ability to edit riffs. You can also chose to show a piano keyboard at the bottom of the screen, letting you know what notes you are playing.

There are a number of recording features that let you keep your creations for posterity. You can record onto disk as well as onto a tape recorder. Your creations can then be made into "records." This way you can take them to a friend's house and play them on a Mac without *Jam Session*.

If you're not satisfied with the sound coming directly out of your Mac you can easily hook the Mac up to a stereo or speaker through the 1/8" sound plug. If you're at work and don't want to get caught, or disturb your fellow workers, headphones do just fine.

Jam Session is certainly not a serious music program. This does not mean, however, that it isn't good. It displays a sense of humor and musical taste and an inspired ease of use that make it great fun for anyone.

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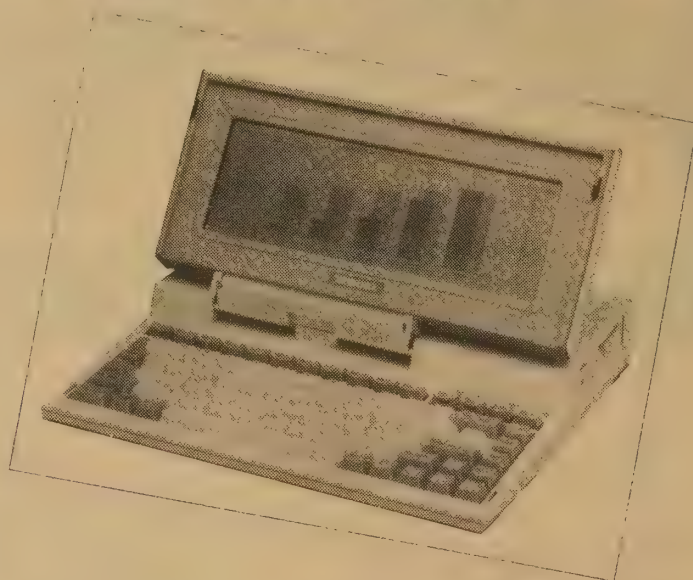
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BOOKS

Build Your Own IBM Compatible And Save A Bundle

Reviewed by: Fred Blechman

By: Aubrey Pilgrim

Published by: TAB Books, Blue Ridge Summit, PA 17214

List Price: \$14.95

I don't often review books. I buy a lot of books, but I'm usually disappointed. They almost always promise more than they deliver. The back-cover and fly-leaf copy writers are masters at making a prospective buyer believe they could not possible live without this book.

Thus seduced into the purchase, I usually find the book is either so basic that it tells me nothing new, or so complex I'm immediately lost.

Build Your Own IBM Compatible And Save A Bundle is different. It delivers more than it promises. This does not mean it's perfect, or has everything you might want to know, but it is a big step forward in parting the sea of confusion surrounding the IBM PC and its compatibles.

This 208-page softcover book is by Aubrey Pilgrim, who has assembled three computers for his own use. But the book goes well beyond what the title implies. It not only tells you how to put together both an IBM PC XT and AT compatible, it also includes lots of other information for a new user—all written with a minimum of computer jargon. Despite this, there are enough detailed photos, drawings and tables to make this a useful reference book.

The IBM PC compatible you'll assemble using this book will fill your word processing, spreadsheet, database, games, graphics, educational and other application needs. You won't have to build the actual boards or do any soldering at all.

Following Pilgrim's guidance, you'll select from the bewildering array of needed components and peripherals — case, disk drives, motherboard, other boards, power supply, keyboard, printer, and monitor — from various sources. You can add a hard disk, tape backup, or other accessories to your shopping list. Then, by connecting all the parts (with screwdrivers and pliers) you'll have your own customized computer. Very little technical expertise is needed.

Pilgrim walks you through each step of the assembly process, revealing many hands-on tips and techniques he has learned, and he explains them in plain language.

But Pilgrim goes considerably beyond the actual assembly. Separate chapters are devoted to describing the main elements of an IBM PC including, motherboards and plug-in boards, keyboards and other inputs, power supplies, drives, disks and diskettes. He also discusses memory and multi-function boards, monitors, printers, modems and troubleshooting. There is even a separate chapter devoted to how to upgrade an old PC to the present XT design.

But now that you have the computer built, what can you do with it? An excellent chapter is devoted to the most useful DOS (Disk Operating System) commands. This chapter is so enlightening that it might be worth the price of the book alone. It is an excellent alternative to the thick, complex, confusing books that abound telling you all the things about DOS you'll never use!

Other chapters cover recommended software, computer furniture and supplies, manuals and documentation, along with computer swap meets and shows. There's even a six-page appendix describing 26 magazines related to microcomputing, and how to qualify for free copies. An eight-page

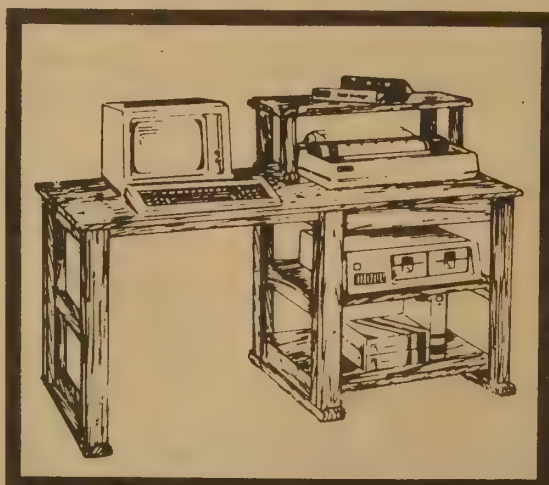
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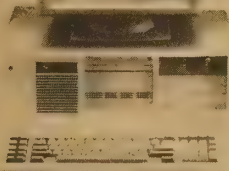
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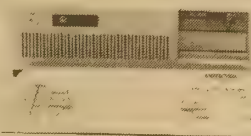
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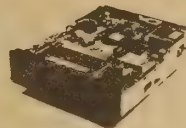
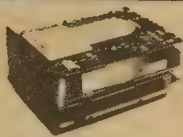
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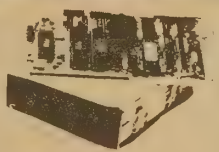
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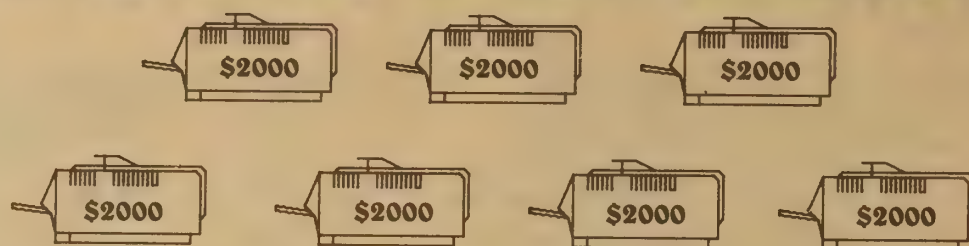
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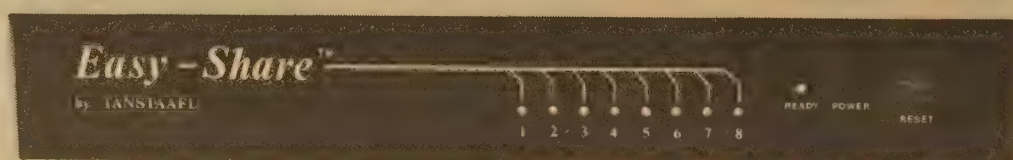
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plain-language glossary and substantial index complete the book.

Just in case I haven't made it clear, I like this book. I have an IBM PC/XT clone, but I didn't build it. Sooner or later I'm going to be making changes (I'll be adding a 3½" drive soon to keep my two 5¼" drives company), and this book will be my guide. I'm not exactly a novice (the XT is my 16th micro!), but I found reading Pilgrim's book interesting and informative. Although it lacks some details I would like to have seen all in one place (disk drive pinouts and cable connections, for example), that information is available in other books — usually buried, unfortunately, deep in incomprehensible prose. It's a pleasure to recommend this book to those who are looking for a comprehensive hands-on overview of the IBM PC world.

Build Your Own is available in bookstores or directly from author: Aubrey Pilgrim, 15663 Dodrill Dr., Hacienda Heights, CA 91745. \$14.95 + \$2 shipping, USA/Canada only.

MS-DOS: A Quick Program Reference Guide

Written By: J. Schieb

Published by: Abacus Data-Becker

Reviewed by: W. A. Yacco

I am a terrible speller. When I was in college, long, long ago, there was a book that I used to look up nearly every word I wrote. It's still on my shelf and I still use it. It's just a little book, hard bound and sturdy, so it's lasted these many years. It had to be tough because it was used a lot before there were on-line spelling checkers. Sometime's it's still more convenient than the various checkers on my machine and I continue to use it.

MS-DOS: A Quick Program Reference Guide reminds me a lot of that spelling dictionary. It has the same small format and durable construction that tells me it will stand up to work. Inside, this little book is just about as utilitarian as the other. No frills, just the low down on DOS through version 3.2.

The entries are not superficial. Looking at the entry for FDISK, as a random test, I discovered that it included succinct information on the command that would not be readily available from most single sources. For example, a note explains the relationship between FDISK and hard-disk partitions for different operating systems. The DOS manual itself does not explain this as clearly.

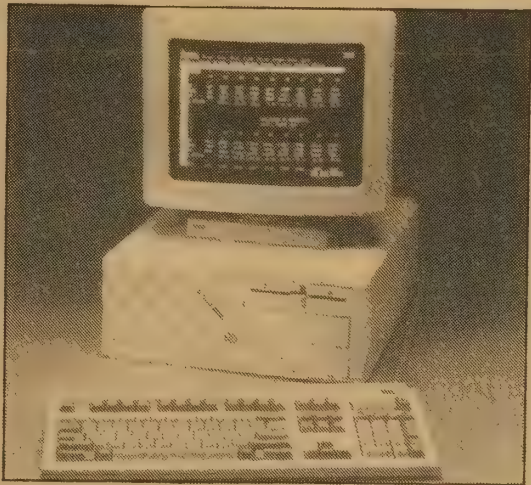
Next, I checked the entries for the COPY and MODE commands. There was a reason for selecting these two. Not long ago I rewrote explanations of several DOS commands for a client. They were for help screens in a commercial software product, so I know fairly well which are the most difficult to document within a limited space.

The MODE command was substantially complete. Examples were provided for setting display modes, serial-port parameters, parallel-port printer parameters and serial-to-parallel-port redirection.

COPY was nearly completely documented. A sometimes confusing point on the /A and /B switches was explained quite satisfactorily, although it could have gone further. It would have been helpful to explain the significance of the Ctrl-Z character in binary-file versus ASCII-file copy operations. The special uses of this command, such as updating a time stamp, were omitted.

This is a good, plain reference that will satisfy almost all of a user's researches. There are one or two weaknesses. It isn't easy to update; it isn't on-line. Then, again, it costs much less than software—probably less than the price of an update. It's also very convenient; there's no need to configure it, run it or add it to the AUTOEXEC.BAT file.

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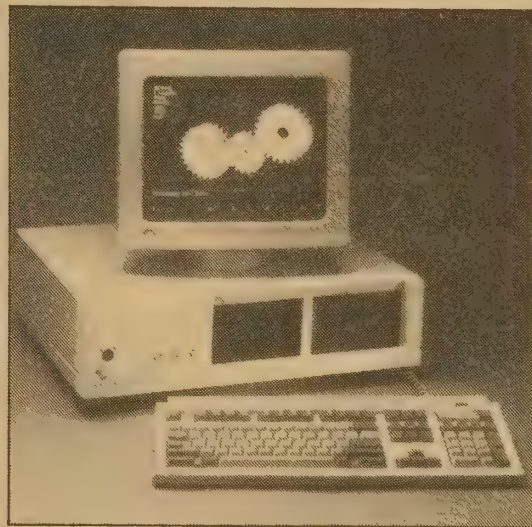
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On The Firing Line

Windows As A New Standard

By Stephan Wickham
and the Diamond Software Technical Team

One of the most important current developments in IBM PC software is the adoption of Microsoft *Windows* as a new standard. Over the next year we will see a large increase in the number of applications that work through the *Windows* environment.

IBM has endorsed *Windows* as its OS/2 Presentation Manager. This means that users who learn *Windows* will be prepared to use the OS/2 presentation manager. There are many OS/2 features in the just-released *Windows* 2.03, including device independence, multitasking of applications and data interchange between applications.

Exciting new applications are emerging in the DOS world to run under *Windows*. The amazing Microsoft *Excel*, which stands a good chance of making strong inroads into Lotus 1-2-3 territory, needs *Windows*. We are happy at Diamond Software to have 80286 and 80386 machines that have the horsepower to run this slick package and we strongly suggest that you take a look at *Excel* if you have a similar machine. Most *Windows* 1.0 applications are compatible with the new *Windows* 2.03. Software developers are advised to rewrite their code to take advantage of new functions and bug fixes.

Windows 2.03 has a whole new character to it. There now are overlapping windows, pull-down menus that stay down until users make a choice, and a way of accessing functions through escape key sequences (these are called menu accelerator keys by Microsoft). Users are now able to hit the Alt key to bring up the *Windows* menu system. From this point the menus operate with the ease of Lotus 1-2-3. The new windowing method creates boxes that take as much of the screen as you need and overlap other windows if necessary.

Multitasking applications becomes easy if you have memory boards that are built to the EMS LIM 4.0 standard. The old *Windows* would swap programs to expanded memory or hard disk, and applications had to fit into a small available memory area. Now with *Windows* 2.03, applications will run in expanded memory.

This version is much, much faster than the old version, and you will be comfortable with it on a 80286 or 80386. Old *Windows* 1.0 applications run quickly through improved display drivers and graphics routines. Some of the improvement is due to a revised font format.

PageMaker Under Windows

At Diamond Software we do a great deal of in-house desktop publishing. In the process, we have noticed that there are some important considerations for Aldus *PageMaker* 1.0 and 1.0a users when upgrading to *Windows* 2.03. Since the screen fonts for *Windows* have been changed, programs designed for *Windows* 1.0x will require that their fonts be converted to work under *Windows* 2.03 — which is equally true for a number of other applications made to work with *Windows* 1.0x.

The conversion is necessary for the toolbox and other elements of the *PageMaker* window to display properly under *Windows* 2.03. To do the conversion, users must run the NEWFON.EXE utility

included with new *Windows*. It is important to note that this utility is not in the *Windows* documentation, but instead is explained in a README file on one of the disks. This file can be read by using the DOS TYPE command or by importing it into a word processor.

PageMaker has three fonts that must be converted: PMFONTA.FON, PMFONTB.FON and PMFONTE.FON. (Please make a backup copy of these files to off-line media before doing this conversion.) Release 3.0 of *PageMaker*, due out in a few months, should contain a complete written description on how to do the conversion. Users for the time being can get by with the procedures described in the *Windows* README file. In addition, we have seen that files created with *Windows Paint* 2.0, which is packaged with *Windows* 2.03, can't be placed in *PageMaker* 1.0 documents. Also *Fontware* 1.0 from Bitstream can not be used for the creation of *PageMaker* 1.0 screen fonts running under *Windows* 2.03.

Windows has been greatly improved in its ability to run programs that were not specifically designed to run in its environment. The old *Windows* had a tendency to crash when an ill-behaved program was loaded. *Windows* 2.03 is very rugged and can often restart after an application runs wild.

The clipboard has been enhanced; it is now easy for users to mark a rectangle over a desired data area and then copy its contents to the clipboard. From the clipboard, data can be copied into another application, into which it will flow row-by-row. A very common example of its use is to paste a section of a Lotus 1-2-3 spreadsheet into a word processing program.

Included with *Windows* 2.03 is a rather neat utility called SMARTDrive, which is an intelligent disk-caching system for users with a hard disk and extended memory. If it is loaded through the CONFIG.SYS it will provide a dramatic improvement in I/O performance. *Windows* will run nicely with 512K devoted to SMARTDrive. Microsoft *Windows* 2.03 has a list price of \$95.

Windows/386

The big brother to *Windows* 2.0 is *Windows/386* for machines with 80386 processors. *Windows/386* was jointly developed by Compaq Computer Corporation and Microsoft. The back of the *Windows/386* box states that it can run with just 1MB of memory. We have found that 1MB is only enough for running the basic stuff that is shipped with the program. This includes *Windows Paint*, *Windows Write* and *Windows Cardfile*. We recommend that users have between 2-4 MB on their 386 systems in order to run *Windows/386* effectively.

Windows/386 is written to take advantage of the virtual mode of the 80386 processor. The computer is fooled into thinking it has the whole machine for one application each time a new application window is opened. Each application operates under *Windows/386*, and information can be transferred between application via the clipboard. Users should be aware that each extra application that is loaded will slow down the system. Three or so loaded applications is a nice practical limit.

Windows/386 runs very much like *Windows* 2.0. It is also very much like the OS/2 Presentation Manager due out around the third quarter 1988. In fact a subtitle "Presentation Manager" appears after you boot the machine close to the title "Microsoft *Windows/386*." Quite clearly *Windows/386* is a good training ground for people who someday might want to use the OS/2 Presentation Manager. Microsoft *Windows/386* has a list price of \$195.

Users can size windows through the minimize/maximize icons, located at the top right edge of each window. Clicking on a maximize icon will change an overlaid window into one that takes the full screen.

In desktop publishing it is almost essential to have an operating environment such as *Windows*. The Macintosh has clearly shown us over the years that a "windows" interface creates an environment that is more user friendly and an environment that requires less training effect for new users. With *Windows* on your machine you can gain much of the advantages of graphics based computers.

1988 is going to clearly be the biggest year yet for *Windows*. We are seeing new applications being developed to run under *Windows*, such as *Designer* by Micrografx. This package is very much like *Adobe Illustrator* for the Macintosh. *Designer* is Micrografx's most advanced program. It can be used in conjunction with a scanner, and the resulting image can be traced and used for line art in different applications.

Other manufacturers are also jumping on the *Windows* bandwagon. Palantir Software has twelve *Windows* products including a spelling checker, terminal emulation package, a resource scheduler, a word processor, a spreadsheet and a graphics program. The Palantir graphing package called *WinGraph* was originally developed by Media Cybernetics and has a list price of \$195. ZSoft has a \$84 package for *Windows* called *PC Paintbrush* for *Windows*. This package allow you to do such things as edit two different pictures (or two versions of the same picture) at the same time.

If you thought that Microsoft was resting after producing the PC version of *Excel*, let me assure you that they are not. We know that they are currently working on a PC version of their popular presentation graphics package *PowerPoint*. The package will focus on presentation management and will be used for slides, notes, handouts and scripts. It will be possible to import data from *Excel* and then embellish it within *PowerPoint*. This package has not been formally announced yet, but it does illustrate the growing level of activity with *Windows* based applications. Now that most of you have your EGA or VGA graphics hardware, wouldn't it be fun to be able to make full use of it through Microsoft *Windows*?

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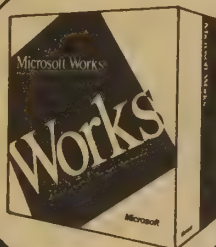


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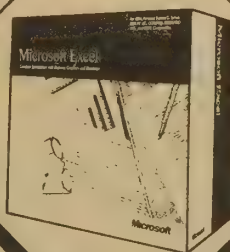
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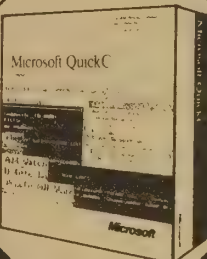
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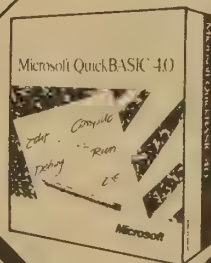
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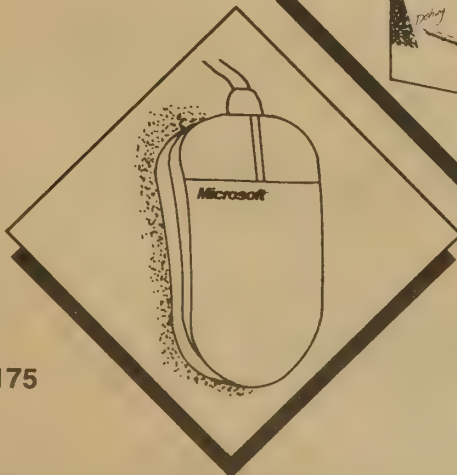
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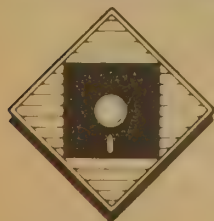
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New Directions For Commodore

When we heard that Max Toy, who had previously appeared on our March 1986 cover in his capacity as senior marketing v.p. at ITT (later XTRA), was Commodore's newly-chosen president and COO, we were quick to phone our congratulations. After a cheerful conversation, he remarked, "I need you to do me a favor." Sure, said we, what's that?

"Well," said Toy, "if you see me doing anything stupid, I want you to pick up the phone and tell me, Max, you're doing something stupid. Because if all my friends in the industry and the press do that, we won't be making very many mistakes."

This represents something of an attitude shift at Commodore, which has in the recent past seemed to have the responsiveness and approachability of the Berlin Wall. While continuing to produce a variety of high-quality machines — currently the perennial Commodore 64 and its big brother the 128, a line of Commodore MS-DOS machines, and the Amiga computers — the company has historically been plagued with image problems, marketing fiascos, and disaffection from dealers, users and the third party development community. Amiga enthusiasts in particular often felt that their achievements came in spite of the parent company — as a recent example, shortly before the Amiga 500 and 2000 models arrived in the marketplace, software and peripheral developers were offhandedly informed by Commodore that due to internal changes there were serious compatibility problems which would cause products developed for the original Amiga 1000 not to work on the new machines. Despite this cavalier treatment from Commodore, third-party developers continued to stretch the capabilities of the company's computers with such products as the GEOS windowing operating system for the humble 64K C64.



PHOTO: KEN JAMES/PAT JOHNSON STUDIOS

While users floundered with often-inadequate support, there were also frequent episodes of disaffection among Commodore's dealers — the release of the Amiga, for instance, was marred by squabbling and disagreement over Commodore's inconsistent policies for allowing dealers to sell the new machine. Commodore's departed founder Jack Tramiel (now chairman of Atari) once voiced a much-quoted comparison of the functional similarity of distributors and whores, and often the company's treatment of its distribution channel seemed to reflect the longevity of this attitude.

A veteran of IBM, Compaq, and ITT, Toy seems an ideal choice for solving some of Commodore's woes and bringing its machines into greater prominence. He brings to the job a wealth of marketing expertise, from dealer relations to product positioning, which he manages to present as a simple matter of common sense. Addressing the assembled company for the first time some 30 days after his arrival, he presented the company's new policy: "Do what is right, do it right, and do it right now."

We visited Toy in December. He'd been on the new job for nearly three months and was already in the process of making some strategic changes. It's early yet, but based on his past track record, expect changes in Commodore's historic reputation as a company that makes great machines and doesn't know what to do with them.

What led you to Commodore, and what do you bring to the company?

It's a tremendous opportunity for me personally. Here's an \$800 million company that sells between 1-1/2 and two million computers a year. Everything I've ever done in my career, I have been driving and trying to move toward the presidency

*CBM President Max Toy
On Communications, Support,
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By Dennis Erokan and Mary Eisenhart

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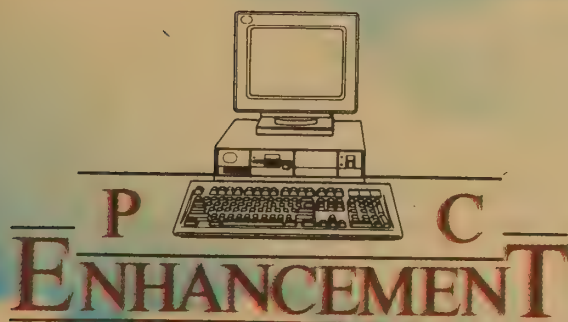
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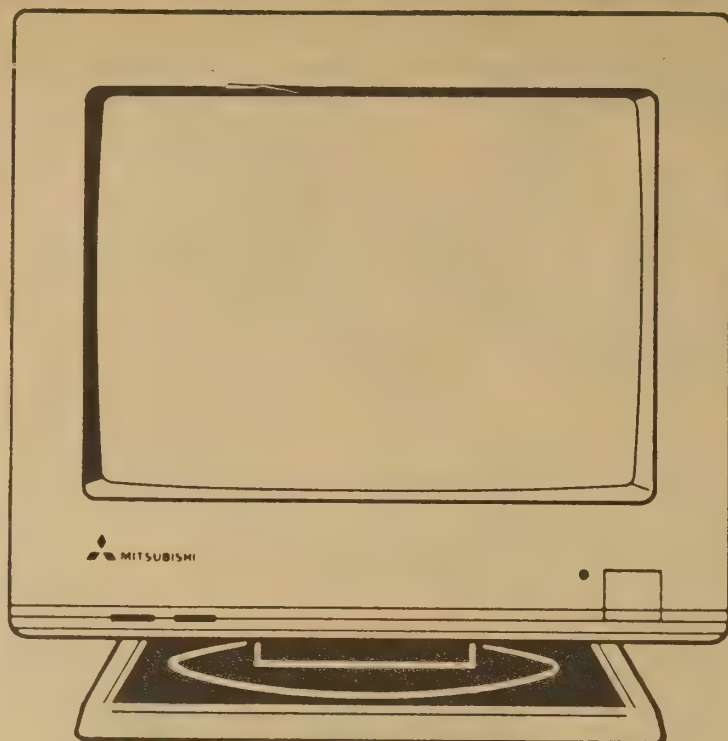
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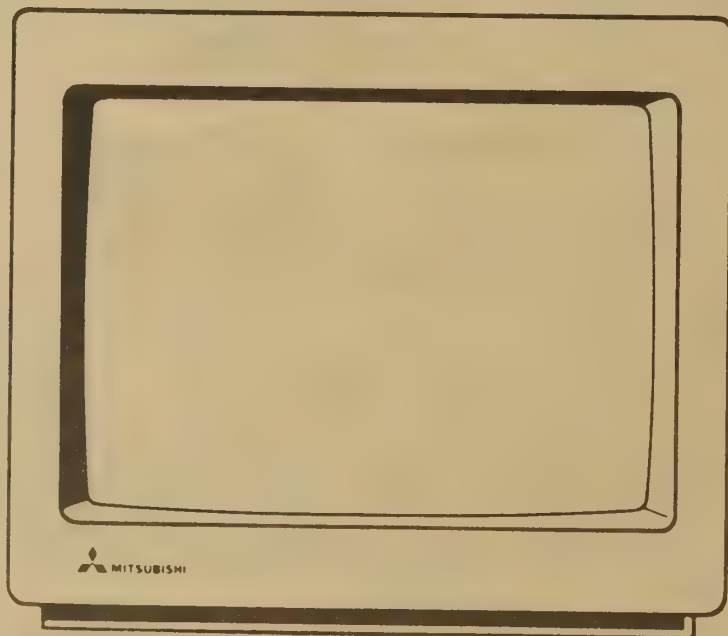
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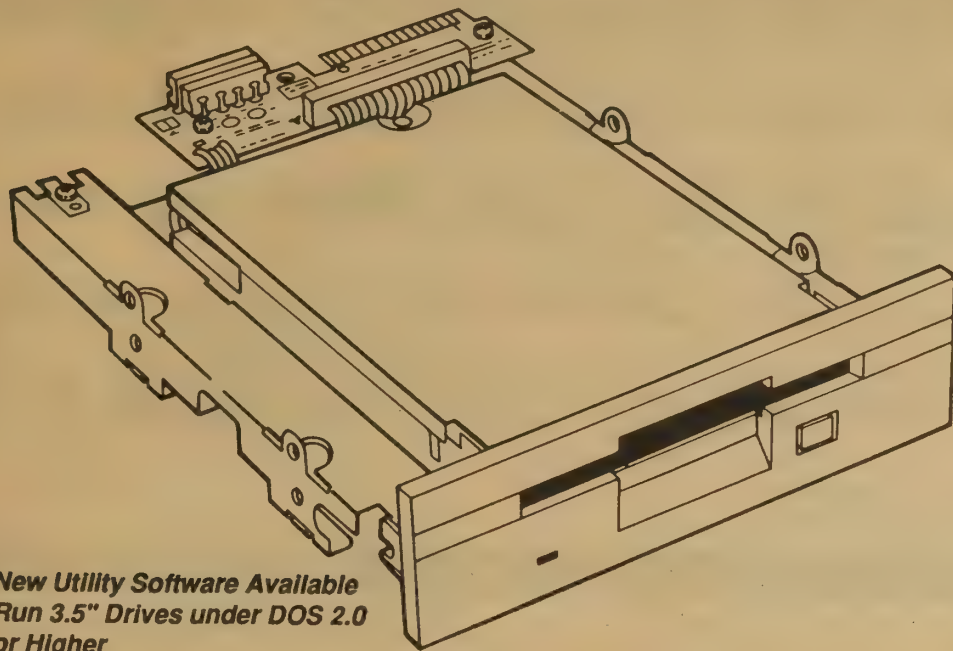
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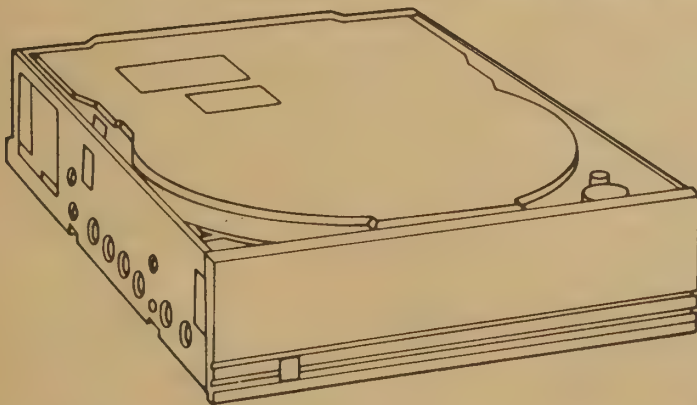
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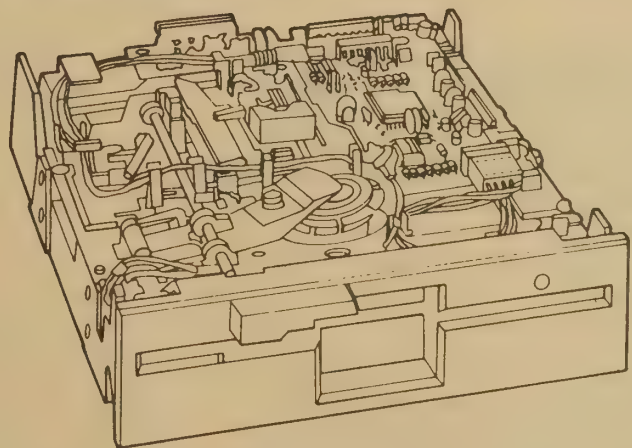
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of a company, not just to be a president, but to come in and have a significant impact on a company, and be a part of what that company is and what it can be.

I've been very fortunate to have worked for some of the finest companies in the industry, had some great training, worked with some great managers. All of that has helped get me ready for this opportunity.

From a business opportunity standpoint, again, I think it's a significant opportunity. Here's a company that has some unique things going for it in this industry. One, it's a company that has the capability to do integrated design of a product from silicon on up. It's a company that has the capability to do integrated manufacturing from silicon on up. There are a lot of companies out there today who assemble computers from a bunch of components that they buy, but here's one that can go off and do the innovative things that are necessary to be competitive, and at the same time have the economies of scale of manufacturing to build a very cost-effective solution to business problems.

The third thing is that here's a company that has an installed base of between 10 and 12 million customers in the world, seven million of which are in the United States. The opportunity to come in and just upgrade 10% of that would be a significant business opportunity.

And then the fourth reason, from a business standpoint, is that not only do you have a seven million installed base, but it's a very active installed base, a very enthusiastic, a very caring — I've never sensed in any other computer company the kind of aggressive loyalty that exists between the company and its users. There are some very strong Commodore and Commodore Amiga fans, and that's exciting. That's a tremendous opportunity, a tremendous potential that we can go work with to help maximize our capabilities.

From a personal and business standpoint, those are the reasons why I think I was so excited about this opportunity.

Your background is very strong in sales and marketing. In the past it seemed that Commodore hasn't held those areas in particularly high regard. Do you see your being hired and your background as being an indication that sales and marketing, and communications with the outside public, are going to be more important now?

I think so, very much so. I think as companies go through different stages of their evolution, it requires different kinds of talents and different kinds of expertise at different moments in time. I think Commodore is in a position today where it has some very strong technology, and the opportunity to come in and integrate some good sales, get marketing, business planning systems in place, is an important part of the stage of development this corporation is in.

I think, too, when I look at some of the challenges and the opportunities in front of us — communication is a very significant portion of it. We've got to go off and be able to address stronger communication with our customers, and understand who they are and what their requirements are, and understand how they're changing. A few years ago, the majority of the customers in the personal computer business were all at the same place, because they all started at the same time, based upon the technology. And now the customer's in a whole new set of requirements based on the whole new spectrum of understanding of where he is in the marketplace.

So it is more important today than ever before to understand who your customer really is, and understand where they are, not only in your product's life cycle, but in their cycle, if you will, that stipulates their use of the technologies.

It's not just Commodore — all of us in our business lives and our personal lives have a tendency keep piling more and more on our plate, and we end up not doing as good a job as we'd like to do in all of those areas.

It also is important for us, very much so, to be in touch with the third party community. Part of Commodore's strength, and one of the things that has impressed me tremendously so far, is just how much third party peripheral items, whether it be hardware or software — how many of those things go along with the sale of a Commodore product. You cannot pick up a *Commodore* magazine or an *AmigaWorld* magazine or anything like that, and not be totally impressed with the literally thousands of creative people out trying to help take this platform of Commodore technologies and turn them into business solutions. There's a tremendous amount of talent being invested, and billions of dollars being invested in creating peripherals.

So we have the challenge to continue to communicate our understanding of our customer set, and our understandings and our relationships with those third parties, to increase our capabilities in the marketplace.

Recognize too that with products like the Amiga 2000, we really have provided a platform device with open architecture, that can serve as a springboard for other development that is a significant step for this company, and a significant advancement toward greater involvement by the third party community.

I think we've got to do a better job of communicating to the influencers, if you will, in the industry, whether that be the press or the financial community — the people who follow our business to try to communicate what's going on to the marketplace. We have recognized that we have an opportunity to go out and do a better job of communicating Commodore's message and its story and its understanding. The beautiful part about that is not only do you get to tell what you believe, but you get an awful lot of feedback back. I learn more from these [interview] sessions than I do from a lot of my market research, because it gives us a chance to sit down over lunch and talk about what's going on and what this company's doing and what this customer's doing, and I get more information from these than I do from a lot of other sources.

I think it's beneficial to spend some time and talk with the press; you want to find out what's going on in the marketplace, that's a very good place to do it.

Most of the microcomputer world revolves around IBM. Commodore, on the other hand, is more or less the center of its own universe. Where do you and your company look for opportunities and directions?

I don't want to sound cavalier, but it really is in the market. It's a combination of recognizing

where the market is, and recognizing where the technology is, and how can I utilize the technology that's available to me in a combination to satisfy a market need. When I can accomplish that, then we begin to see the development of products to satisfy those needs.

But it's not enough to say I can go look at the market and the market only, and it's not enough to say I can look at technology and technology only. I have to get technology that can be applied in a cost structure that will allow the market to satisfy its requirements. It's those areas that you want to approach with flexibility.

I think it's also critical to go back and focus on where your strengths are, and recognize that you're going to make a step that is in line with what your other steps are, as opposed to stepping totally sideways and trying to go in a different direction. I mean, the body isn't made to go that way. If I'm walking straight ahead and all of a sudden my right leg shoots out 90 degrees to the right, that's going to create some problems. So it's important that you also recognize how you use those technologies and the information the market's providing you, in light of where you are. I may want to be over there to the right someday, but I may not be able to go over there right now, so I've got to do that and recognize that my market's changing and evolving.

What are Commodore's strengths, and what do you see as its direction? Has it been trying to do too many things at once?

I think the strengths are what we were talking about, integrated design and manufacturing capabilities, and again, who your installed base is. When I look at our installed base, the significant portion of our installed base today is in the home, work-at-home, the tiny business, and the small and medium business. The exciting thing about that is that there are more enterprises there than in any other single place in the marketplace. The next exciting thing about it is that they're also the least computerized of any segment of the marketplace. That also happens to be the biggest challenge as well.

As far as what Commodore's been doing in the past, I think Commodore has been trying to address a lot of things. I don't know that they've been doing too many things, but it's a position now where I'm going to benefit from some of the things that have been accomplished, so I don't have to do everything.

I do think that we as a company have to keep our focus very tightly on what our strengths are, and where our opportunities are. We now have three distinct product lines satisfying three dis-

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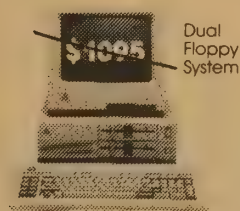
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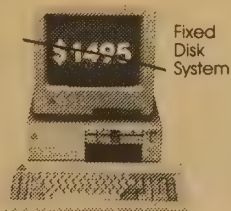
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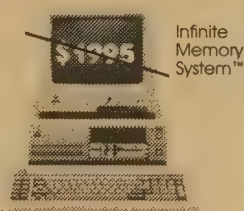
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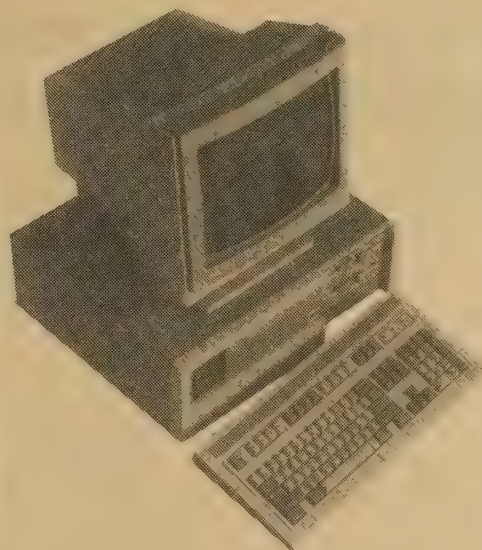
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If you want to find what a company is about, what their challenges are and what their problems are, and what they're doing well, you go and read their customer complaints. The customer will tell you what you're doing well and what you're not doing well.

tinct markets — multiple markets, three's probably an understatement. I think we have the opportunity to go off and leverage in all of those markets.

From a focus standpoint, we are going to have to prioritize and do a few things very well, as opposed to trying to do everything. Which says that there may be an opportunity that may be very significant, that Commodore may not be able to address today. It doesn't say that it's not a great opportunity, it's just that it may not be the right time for us. So we will try to evaluate those focuses, go back to some very simplistic approaches — you list the things you want to do, and when something new comes along, you try to find out where it fits on that list, recognizing that whatever the bottom of that list is is probably going to fall off, and is that something you're prepared to do as a business? Unfortunately, and it's not just Commodore — all of us in our business lives and our personal lives have a tendency to forget that, and we keep piling more and more on our plate, and we end up not doing as good a job as we'd like to do in all of those areas.

So we're going to concentrate on moving our products closer and closer to solutions for our customer set. We're going to concentrate on establishing firm and well-defined distribution channels for well-defined and firm product sets — which are differentiated by product channel. So that you may see a product from Commodore that is in one channel of distribution and not allowed to function in another channel of distribution. It's because of the nature of the channels and the nature of the customer sets.

What are the three product groups, and what do you see for them in the immediate future?

First of all, there's the Commodore 64/128 category machines. Those products today are primarily sold in the home and work-at-home marketplaces. In the case of the Commodore 64, a large portion of the users — and a very fast-growing segment of the users — are under 12 years of age.

That's not to say that we have not seen the Commodore 64 being used in business; in fact there continues to be new software developed, and new opportunities on the Commodore 64. It's a product line that continues to grow — we still sell in excess of a million to a million and a half computers a year in the Commodore 64/128 line. We bring more first-time users to computing than any other company in the world. So it's an exciting product line, it's a product line that we see continuing very strongly for a long period of time. We are continuing to put our research and development dollars

into that product, and you will continue to see additional development in that category from Commodore for some time.

Has the GEOS operating system had much of an impact on sales of the C64?

I think we've seen a significant impact. It has helped enhance the friendliness of the product, it's helped expand its capabilities, and we're seeing more and more 64s being utilized in the work-at-home environment.

Fortunately or unfortunately, industry leaders have tried to position the 64 as a home product, and in effect put it in the category of a toy. Granted that there are a lot of young kids that use that machine and play games on it, but in addition to that we must recognize that there are over 10,000 titles of software for the Commodore 64, that over 3000 of those are education packages, over 5000 of them are business packages, and we continue to see development with the GEOS operating system, of the new business or related packages into that marketplace. So it's continuing to grow.

All you have to do is go to a Commodore user group meeting, and talk to the people about what they're doing with them and you will find out that by no stretch of the imagination is the Commodore 64 a toy machine. It is doing real computing, and it has the benefits of having graphics capability and a price point that provides an entry point for people that no other computer does in the marketplace. There is no real competition for that product.

The 128, of the two machines, tends to be an even bigger utilization of the work-at-home or tiny business type product. It continues to enjoy a very strong success, and we will continue to invest and develop products that support that category, so again it will continue for some period of time.

The second category — we announced in the United States an MS-DOS compatible line this past year, and enjoyed a tremendous amount of success with that product in a very short time. It basically convinced us that there are an awful lot of people out there who have found, through their experiences in the past with Commodore, that Commodore delivers a high-valued quality product. I'm sure those people have had an opportunity to buy somebody else's DOS machine, but for some reason they have not, and yet when Commodore came into the marketplace a large number of customers went out and bought that product very quickly.

I think you will see us to continue to develop an MS-DOS compatible line of products, and continue to invest in the development of a broad-based product set, again recognizing who our cus-

tomers are. And you'll also see in that area that we'll differentiate those items by channel, we will have a distinct set of products that are targeted for the home and work-at-home marketplace, to be delivered through the mass channel, and then you'll have a completely different and distinct product set that we deliver through the dealer and the VAR marketplaces, concentrating on what their requirements are. So you've got product differentiation by customer set and product differentiation by channel of distribution.

We're excited about the opportunity to see the United States come back as a manufacturer of computer technology products. As you know, we have in Pennsylvania a semiconductor facility, and then we will be doing final assembly in the United States for the MS-DOS line, which is important to us both from a financial standpoint, but also strategically because it's a growing factor in doing business with the government.

The third line of products is the Amiga product line. Two years ago the Amiga 1000 was announced, with a heavy emphasis on graphics capability and sound. Recently we have announced the Amiga 500 and Amiga 2000, with the same high degree of graphics capability and sound capability. But they were also designed from the very beginning to optimize the multitasking capabilities.

There are a lot of products in the marketplace today that do multitasking, but this machine was optimized for it, so it has capabilities far in advance of anything that we've seen in the marketplace, especially at that price point.

We see the Amiga product line opening up new reasons for people to be buying a home computer, because it gives you a device that can be the center of your home-entertainment, work-at-home, home sound systems, video system — all of those can be integrated, utilized and optimized with the use of Amiga products.

The Amiga 2000 has been positioned as a platform for future development. It has the business capability, and at the same time has the capability of running DOS as a task. So I've got the integration of the best of both worlds — the ability to use my Lotus 1-2-3 and transfer those files back and forth through my system into my Amiga files and utilize the capabilities I have there.

Do you see the Amiga 2000s going after the Macintosh IIs and the Suns of the world in the workstation market, rather than competing with Atari?

The Amiga 2000 is more competitive with the Apple/Sun environment. As a manufacturer you try to put your technologies together into a product, but really, the marketplace is what positions your product. What we're seeing is that it's in that [workstation] area that the market is positioning the 2000, with its advanced capabilities to be a very powerful, low-cost workstation product. It opens up a lot of opportunities in the area of graphics, and it utilizes the things that the marketplace has been asking for — graphics, user-friendly interfaces, and the multitasking capabilities to integrate a lot of task into my business solutions.

It's been very well accepted as a powerful workstation. We see ourselves at any given point in time competing against any of those types of manufacturers.

Are you satisfied with your representation in the stores and in the retail channel?

Here comes the commercial. (laughs)

Well, naturally, we have a very strong, loyal distribution channel. We've got people who have supported Commodore and Commodore Amiga products for a long time, who have been very effective in the marketplace. It is our intention to continue to reinforce and support those people, to help them continue to grow their business, and

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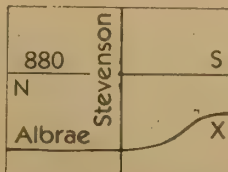
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Commodore has a tremendous opportunity to go out there and mobilize its customers, the third party community and its dealer channel very quickly, if we'll just share a little bit of information with them, let them know that we understand what's going on out there.

continue for it to be profitable for them to represent Commodore in the marketplace.

We will be looking to expand our distribution capabilities into other channels, again specific by product. At the same time we're continuing to grow and reinforce our distribution channel to try to have a broader-based system to serve a broader-based market. Commodore early on did not have products that were platforms to be supported in the higher end of the business market, the workstation market for example, and now we're seeing the technology and the packaging of the products in such a way that it opens up some new market opportunities. We're looking for long-term business relationships with distribution channels that will continue to support our products for a long time.

What's a typical day for you in the last few months? What are the various areas you're getting into as you're getting to know the company?

Well, the first thing I had to learn was where to park my car and what door to come in. (laughs) We had our first company meeting — I waited till I'd been there about 30 days so that I felt that I could stand up in front of this group of people and show a little bit of intelligence.

We had our first meeting, and I had to be away for another meeting in the morning, so I came and the meeting had already begun, because I wasn't on the agenda till later anyway. It was an all-company meeting, so the only people left in the entire building were a couple of people strategically placed around to answer telephones. So I come running into the building, just running as fast as I can, and I can't find the meeting. And there's no one around to ask (laughs). And I'm running around the entire building trying to find where this meeting is.

I finally tracked it down, but I really have spent some time trying to find out which door to come in, where to park my car, and all that.

The first thing I did when I first got there was that I sat down and met individually with each of the people who report directly to me, so I have a good understanding of where they were and a chance for them to understand who I was. A little chance to get to know each other.

The second thing I did is that I went to our customer complaint file. If you want to find what a company is about, and what their challenges are and what their problems are, and what they're doing well, you go and read their customer complaints. The customer will tell you what you're doing well and what you're not doing well. It's the

quickest way to get an insight into the company.

So I spent the first couple of days, more like four or five days, reading customer complaints, calling customers, end users, dealers, user groups, trying to understand what the people who looked at us were seeing.

What did they have to say?

The concerns primarily had to do with support, whether from our channels of distribution or from us. I remember I made one call, it was to Atlanta, Georgia. I can't remember the man's name, but I asked if he was there, and he said yes, and I said, "My name's Max Toy and I'm the president of Commodore, and you'd written us a letter and I'm calling you to ask about that letter." And the guy started talking, and all of a sudden his voice changed, and all of a sudden it dawned on me that this guy was probably 12 years old. I was talking to a young man who all of a sudden realized that he was talking to the president of Commodore Computer, who called to find out what his concerns were about his computer.

That must've amazed him.

He and I had a long talk — we talked about his product, and why he bought it, and the fact that the reason he bought it was because of all the great software that's out there, and he and his buddies trade software...It was very good to have a chance to sit down and talk to the customer.

I've called user groups, I've called dealers, and you're right, a lot of them have been amazed that the president would pick up the phone and call. I talked to a dealer the other day who had written a letter. Commodore has a tremendous opportunity to go out there and mobilize its customers, the third party community and its dealer channel very quickly, if we'll just share a little bit of information with them, let them know that we understand what's going on out there.

The questions about support, the questions about technology changes, were the kinds of questions our customers were asking about and had concerns about, and they were also the kinds of things that they were very supportive of. Commodore probably has one of the most loyal user communities that exists in the marketplace today.

We took action on those things. We had some concerns about some letters about the ability of our customers to get into our customer support center via telephone. So we went out and in the first 30 days increased that staff 50%. It's not enough to say that you want to provide better support. It's what you do, it's the action you take that's important.

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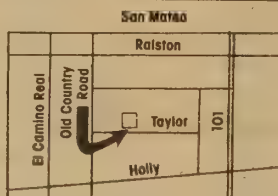
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So in a very short time I think we have taken some very aggressive steps to answer some of those concerns and move support out to the customers. Already we're seeing the benefit from that — it's paying off from a customer satisfaction standpoint, but also from a business standpoint, because we're having an outstanding quarter.

Recently one of the big software developers, WordPerfect, came into the Amiga market. What kind of response are they getting, and is there room in the Amiga marketplace for the large companies to come in with their software products?

I think very much so. If you look at the Amiga marketplace, the Amiga technology has basically been on the market for two years. As you know, it normally takes 18 months to two years on a new operating system to see very integrated business solutions. In this time period we've begun to see that — there are now in excess of 800 individual titles of Amiga software. I'm told that two years into development that that is substantially more than, for example, what we saw in Macintosh early on in its development. We're seeing a lot of very good, very creative, very challenging software enter the marketplace.

Companies like WordPerfect have come into the marketplace and are seeing some astounding success in a very short time. WordPerfect has made it publicly known that, seven days after they announced their Amiga product, they had recouped all of their investment and the product was now paying for itself as a profitable contributor to their line. They currently enjoy very significant market share of what is quickly growing to be a very large base. By the end of the 1987 calendar year we'll have close to half a million installed base of Amiga products.

The installed base is getting sufficiently large that some very large companies can no longer ignore Amiga as a product line to write and develop for. They're also finding that with a very small investment they can enhance their current product to take advantage of the multitasking and the ease of use interfaces the product has, and it opens up a whole new market opportunity for them.

In addition to that, though, we've also taken some very proactive steps to try and encourage that. We have made some investments to establish a group whose entire job is to go off and support the third-party software community. We've established that group to provide support capabilities, we have exchanged engineers with different companies, to try to facilitate the transportation and development of other business software over to the platform of Amiga product technologies.

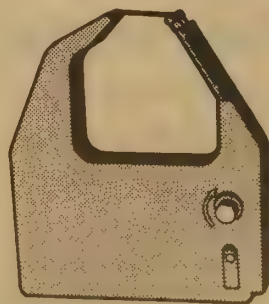
Would you want to encourage the porting of Macintosh programs to the Amiga?

There are some very good application packages done on the Macintosh, and very good application packages done in the DOS environment. We would like to encourage those people who believe that what is today a half a million installed base, a base that's growing exponentially — we'd like to see them port their products over. We are working with a lot of those people to make it easier, and we offer the opportunity to work with a lot of other people to make it easier. It's one of those things where I would like to see any good application package, regardless of what it operates on

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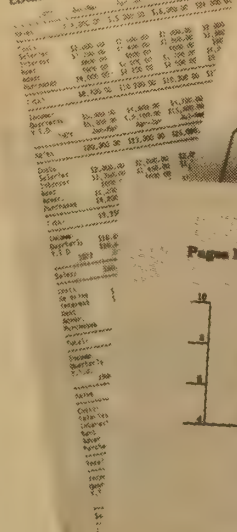


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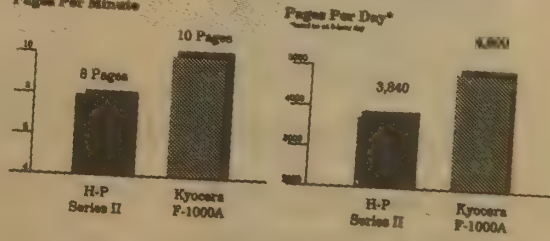
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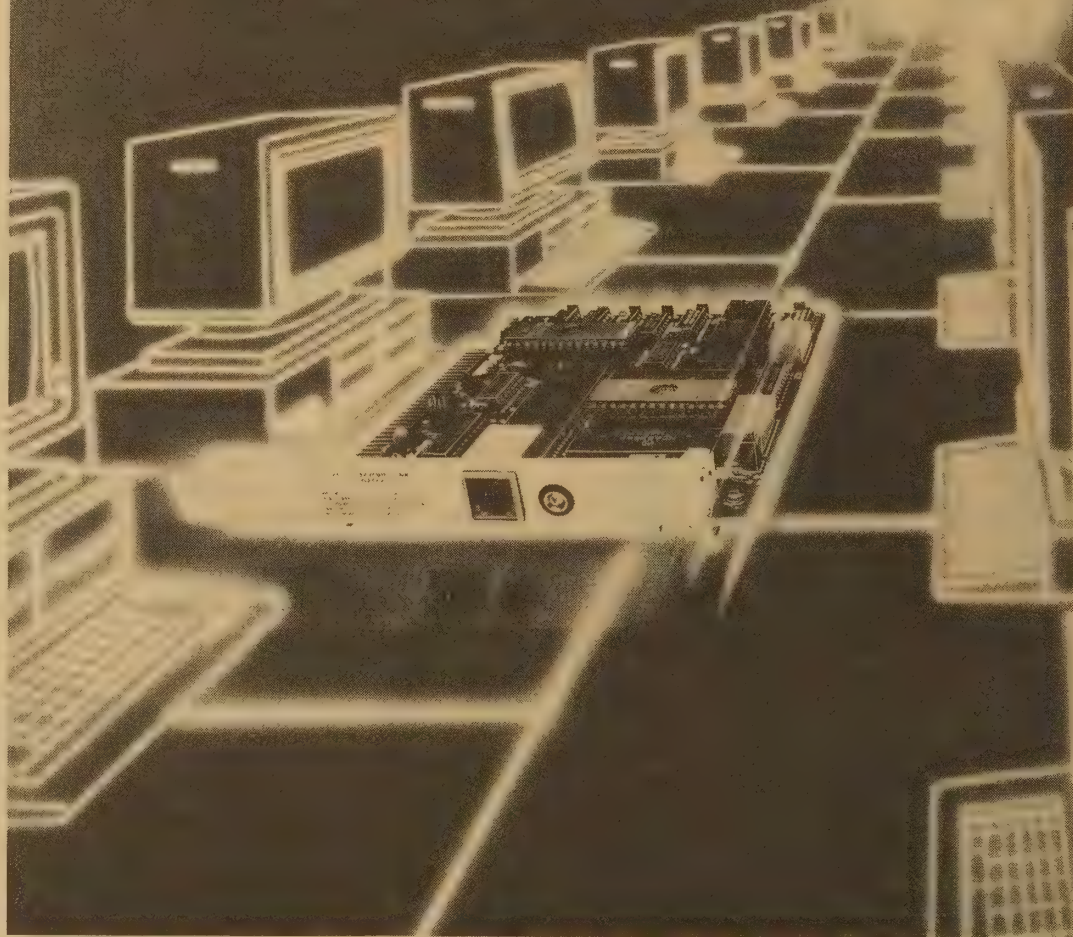
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now, moved over to our platform, and there are things we can and will do to make those things easier.

Leaving the 32-bit machines out of it, you still have various machines in the multitasking arena. What are the advantages of the Amiga 2000 versus, say, a 286 running Windows?

First of all, from its inception it was designed and optimized to be a multitasking system. There are a lot of products out there that are trying to run more tasks than one at a time, but that doesn't necessarily make them a multitasking computer.

It used to be a few years ago that the same engine blocks came down the line in Germany, and one went one way and became a Porsche, and another one went another way and became a Volkswagen. Then they were optimized for different things. Just because you're a 68000-based product doesn't necessarily mean that you were designed to be a Porsche. You may have been designed to go to the grocery store. So what we have chosen to do with the 68000 class of machines is optimize it for multitasking, because in any design effort you have to make certain tradeoffs along the way.

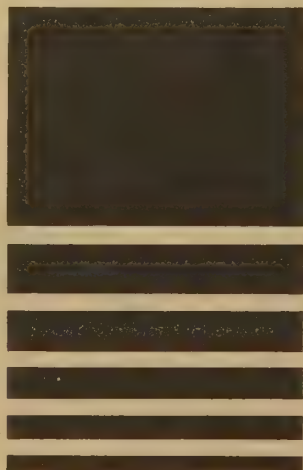
When you set out in the beginning to build a very efficient multitasking system, the performance capabilities and enhancements that you get are incredible. And it shows when you use an Amiga product. As far as I'm concerned, the biggest thing we've done wrong with the Amiga 2000 is we've priced it too cheap. For what that machine has the capabilities to do today, let alone what the platform provides for opportunities in the future, it is very well positioned from a price/performance standpoint, and it probably should have been more expensive.

After being at Commodore for about two months, what do you see as the things that Commodore has historically done wrong, and what do you propose to do to straighten those things out?

Well, with a company that has now become a profitable 800 million dollar company, it's hard to say that it's done a lot of things wrong. I think there are things that Commodore could've done, in retrospect, that Commodore, IBM, Compaq, Apple, could've all done differently. I think that our biggest focus has got to be on our market and understanding who our market is and how it's changing, our third party support teams, and our channels of distribution. I think that we will be able to restore a meaningful relationship with a lot of channels of distribution.

We have the opportunity today for the distribution channels to bring a different customer set to the marketplace than they have been exposed to in the past — there's a whole customer set out there, that is not being served by some channels, and we can bring that back to them. We see that there is a resurgence in the retail side of the business.

It's almost unfortunate today, but in our channels of distribution retail's almost a dirty word. But there's an awful lot of product that's sold based on time and place availability, at the point of sale, and whether you call yourself a dealer or a VAR or a VAD or whatever, where you meet the customer, where you hand him the product and take the money — I'm not hung up on what category you put that in, as long as you're doing that. I think there's a tremendous opportunity for our distribution channels to reap the benefits of the investments we're making in technology, but also in the things we're doing to restore faith and confidence in Commodore's ability to run a multi-channel of distribution business.



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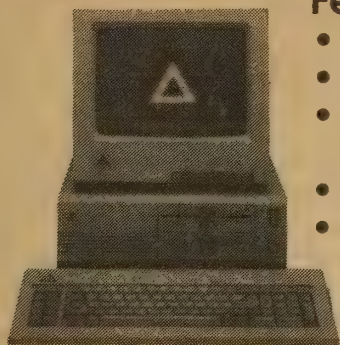
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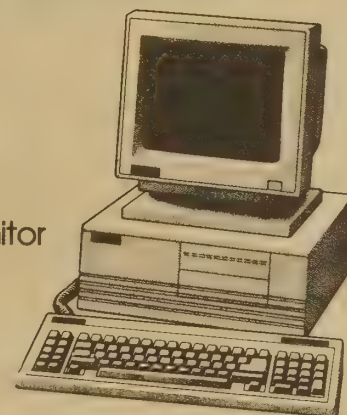
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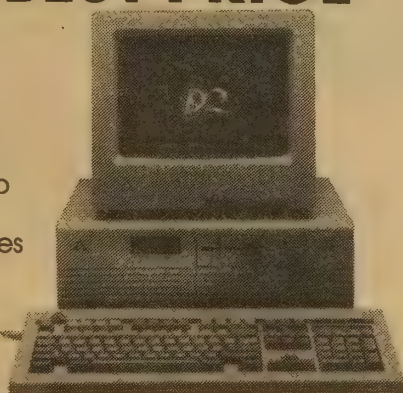


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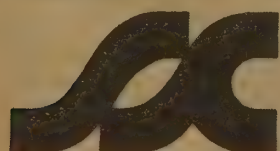
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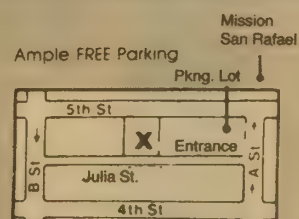
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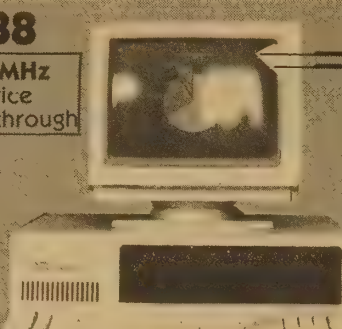
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When the Amiga was first released, there was a lot of unhappiness and confusion among dealers about who could and couldn't carry the product. Has that more or less died down?

I really don't know. I will tell you that the people who are selling the product are making money and are happy with it, and we see our dealer base growing on a daily basis.

Desktop publishing was a niche that found its machine in the Macintosh. Do you see other niches like that for the Amiga?

We've seen a tremendous amount of growth and acceptance in desktop publishing. I can remember the first time I was at a conference and heard Steve Jobs begin to expound on desktop publishing, and everyone gave him this quizzical look...Here's a guy that continues to amaze me with his brilliance and his market perception.

But desktop publishing is really a subset of a bigger and more powerful market called desktop presentation. The significance of desktop presentation is that it does not limit you to the output media that you select. Desktop publishing is primarily printing. But there is a whole opportunity of other presentation capabilities — 35mm slides, sound, video, the integration of sound and video and computer technology together in a video presentation, a live presentation using the interactive computer system to enhance your presentation. It is in that area today that the Amiga offers probably the most advanced sophisticated total solutions of anybody in the marketplace. There are a lot of competitors out there who have established a position of desktop presentations, who are promising us other presentation capabilities, but it doesn't exist today in those areas. It does exist today in the Amiga product line.

You're seeing things happening — Max Headroom on television, they use an Amiga. You're seeing companies put their whole annual report on videotape. There's a company that did its entire five-year strategic plan on a videotape, and it was all done using an Amiga product. The communication that takes place, because of the utilization of more senses, is so much more sophisticated.

On the other kinds of spectrum, we see use of the technology in areas such as education. Ohio State University is doing a package on the Amiga where they teach signing for the deaf. They use the multitasking capabilities and the high graphics capabilities to enhance education and learning. We're seeing the product being used in the military, we're seeing it being used in a whole spectrum of places where you haven't seen that kind of productivity before, and that kind of creativity. There's a museum in New York devoted exclusively to computer-generated art, and the entire studio was done with the Amiga product line.

Are you interested in the university and education markets?

At one time, Commodore was the education computer. It owned the education marketplace. It's still the second-largest installed base in the education marketplace, primarily the 64 and 128. We still rank very highly as far as our annual sales.

I think you'll begin to see Commodore in a more aggressive role in that area, recognizing again that we have distinctive products for distinctive parts of the educational marketplace. We will make investments in K-8 as well as the higher education marketplace. We're seeing the benefits of some of those activities already.

Some of the old adages still hold true. It used to be said that for every machine you sold into the education marketplace you sold four as a result of that that were drag-alongs. That is still very, very true. So it's still a very strong marketplace

What's Happening?

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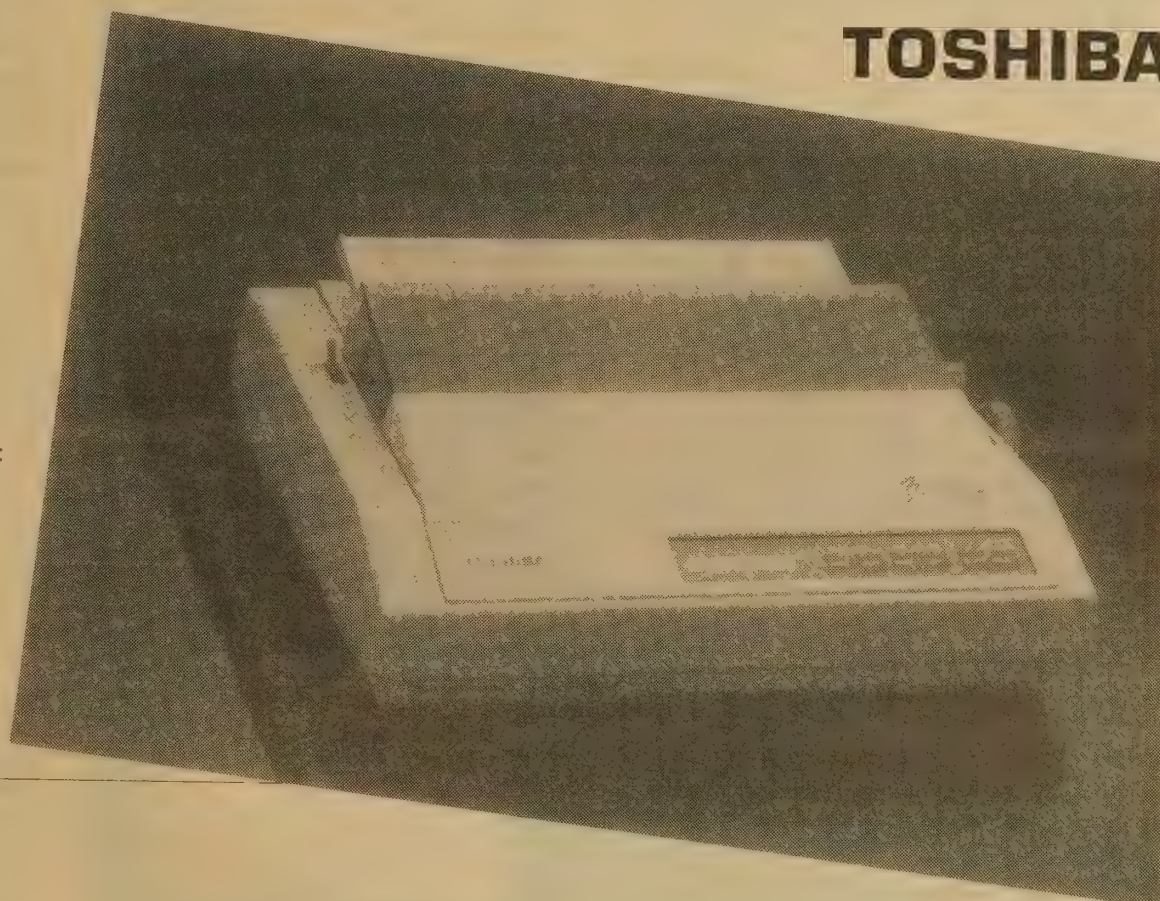
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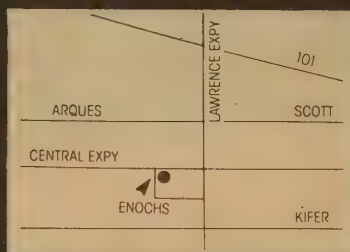
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and a very competitive marketplace. The 64 is still very viable, because it still brings more computing power for the dollar to the education environment than anything else.

We're also seeing Amiga's acceptance, and we're also seeing its acceptance and the development of some very sophisticated education packages on the Amiga. Recognizing that the education market has moved past the repeat drill exercise mode of learning. Amiga type technology and graphics allows you to enhance the learning process and reinforce the actual learning. It also involves more of the senses, and any time I can involve more senses in the learning process, I have a better chance for greater retention. We're working with some different companies to create and deliver tools that help involve the teacher and keep her or him involved in that process. Drill and practice is not enough reason to go and buy a computer in the education marketplace today.

What kind of act is Jack Tramiel to follow?

I don't know, he's been gone for three years... (laughs)

Jack Tramiel has got to be recognized as a leader in our industry, and you certainly have to respect what Jack has accomplished. He has gone on, built and restored a strong company. Atari's a fine company in a very competitive marketplace.

But Commodore is not Jack Tramiel's company today, and it won't be tomorrow. The success that Commodore is going to have in the marketplace is dependent on what Commodore does today and tomorrow, and that's the opportunity that we have in front of us.

I'm never going to take shots at anybody. One of the greatest learning experiences I ever had was when IBM sent me to Harvard as part of their executive MBA program. You sit there and get to go through the case studies with the professor and all the students, and just literally rip this poor guy up one side and down the other. And it became very apparent to me how easy it is to be critical and second guess and question somebody else's efforts. I've learned that people in business make the best decision they can. No one intentionally sets out to make a bad decision. They try to do the best they can with the best information they have, and do what they think is right.

Now not everybody is right all the time. But they try. And yet we sometimes become very critical, and it's easy to sit back and look at what somebody did two or three years ago and take a shot at it.

It took me a long time to learn that it was okay to make a mistake. They asked the president of 3M one time, what's the key to your success. And he says, well, my right decisions made more money for the company than my wrong decisions cost it. That was the key to my success.

You look at people like Tramiel, and Steve Jobs — I mean, who can question what they did? They did what they thought was right. And Steve Jobs will be back. Jack Tramiel is back. There will be other people back too.

Commodore is a different company today, and I guarantee it's going to be a different company tomorrow. It's a company that recognizes that we are a service company. See, a lot of people look at us and say we're a computer company. We're not. We trade computers for dollars, but if you really understand what the business is, we're a service company. And as long as we keep that in sight out in front of us, then we will be successful. Because there's a whole lot of people out there that believe in Commodore, have acted on Commodore and bought Commodore, and have built up confidence in us, and all we've got to do is take care of them, and then they'll take care of all the other problems for us. □

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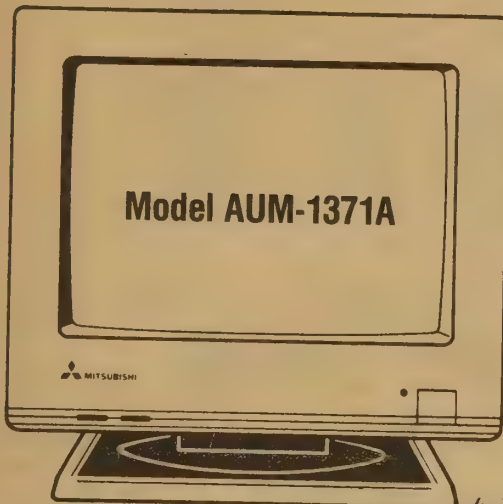
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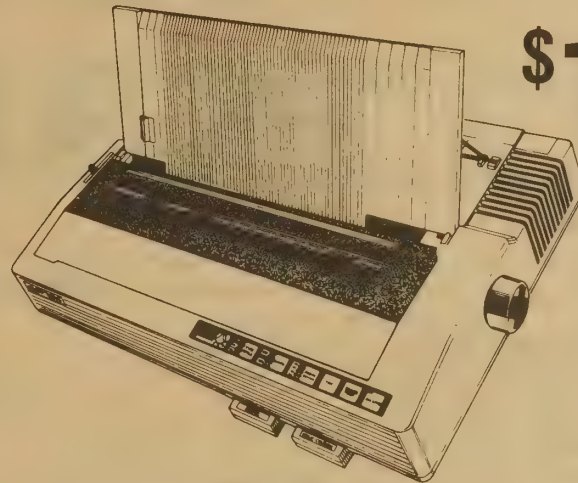


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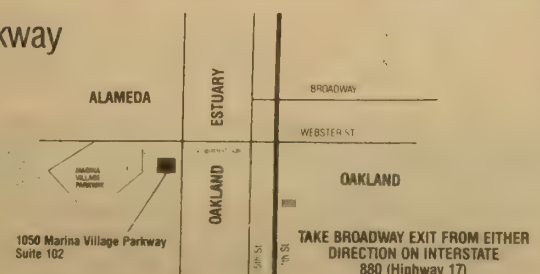
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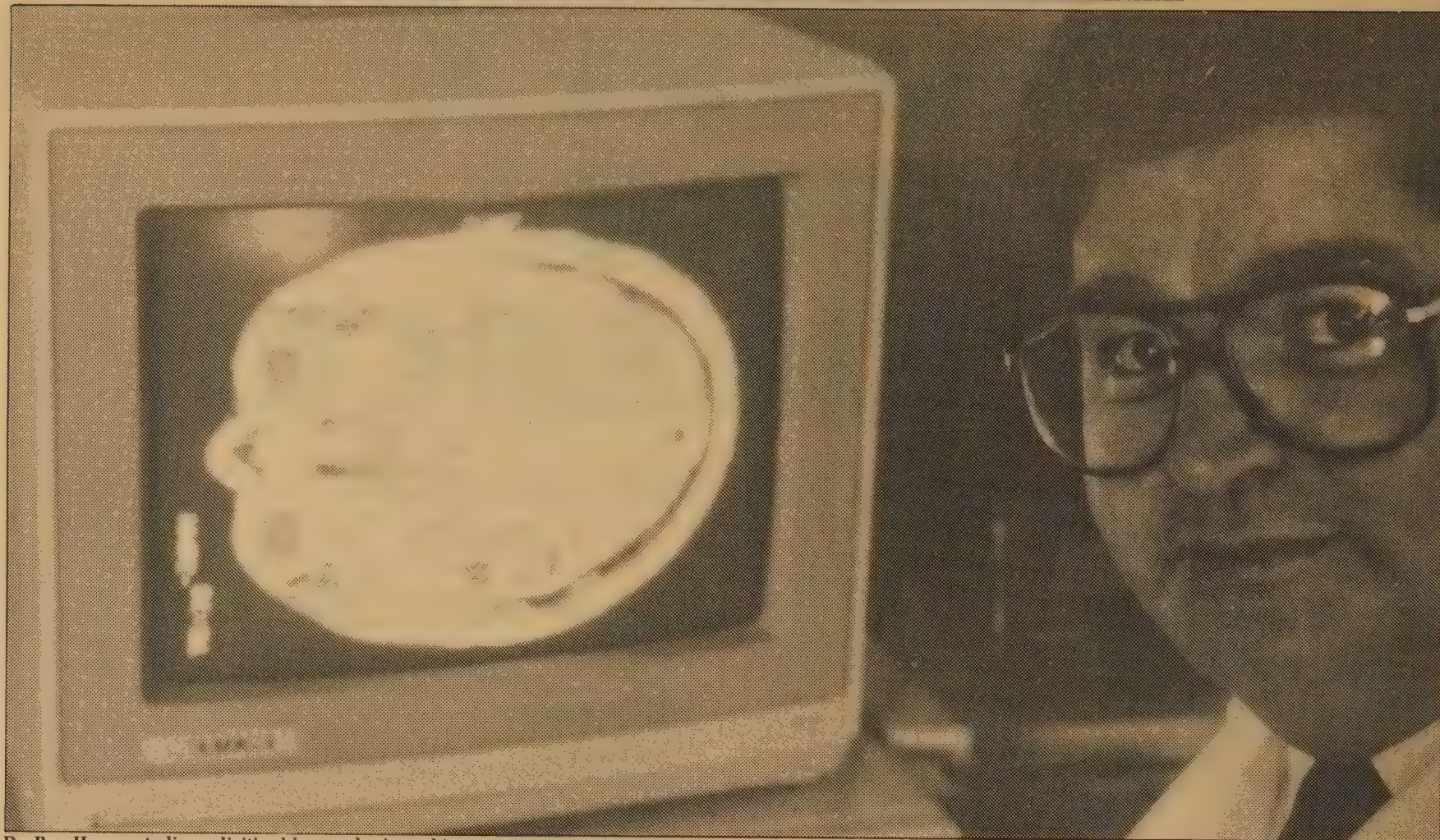
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Dr. Ron Harper studies a digitized human brain on his Amiga 1000.

Brain Surgery And The Amiga

By Ben and Jean Means

Brain surgery using a \$1,000 personal computer as a diagnostic tool?

According to Dr. Ron Harper, a professor of anatomy at the UCLA Medical School, one problem in brain surgery is that of precisely locating the specific areas for surgical removal. Hospitals use half-million dollar imaging machines to gather brain data, but the surgeon needs a graphics computer to study the data for better diagnosis. Harper had been using an \$80,000 DEC VAX minicomputer in his UCLA Brain Imaging Research Project, but he's replacing it with...an Amiga personal computer!!

The UCLA Brain Imaging Project

The UCLA Brain Imaging Project is located in the Brain Research Institute. This large facility houses several research scientists, neurosurgeons, and a mountain of data tapes,

along with a DEC VAX GPX, VAX PDP 11 mini-computers — and their proposed replacement, and Amiga 1000 and 2000 microcomputers.

The purpose of the innovative project is to research the treatment of temporal lobe epilepsy, a severe form of the disease located deep within the brain where surgery is difficult. This epilepsy may cause a variety of visceral or autonomic dysfunctions; most tragically, if left untreated, it may deteriorate into crippling, generalized seizures spread throughout the brain.

But some epilepsy can be surgically treated. If a seizure focus can be localized within a discrete brain region, then the neurosurgeon can remove that area which is the source of the seizure focus. The problem is gathering information from deep within the brain. Scientists used to place electrodes in the brain on the basis of boney skull landmarks to observe changes in electrical activity;

because of individual brain structure differences, these approaches were less than adequate.

Through The Brain Darkly: The Importance Of Computer Imaging

Today's scientist uses advanced imaging equipment and less destructive brain scans, like the CAT, PET, DSA and MRI (See Brain Scan Sidebar), to pinpoint the seizure focus. Dr. Harper says, "These brain images let us know if surgery is even feasible. Over a period of time, the unaffected hemisphere may 'learn' the seizure behavior of the affected hemisphere. Once this 'mirroring' occurs, surgery may not be possible, since we can't remove that much brain tissue without disrupting other body processes.

"Early detection is so important; in the old days, our first clue was when a patient had manifested a major dysfunction. Often this was after the brain damage was already

too advanced to do much for the patient. Now with early detection, we can catch these problems in time and use less invasive corrective surgery. We can just scan the area and translate the data into a computer picture of what's going on."

Before this kind of imaging became available, the margin of error was much greater, and Harper adds, "Prior to surgery, the doctors use every scrap of information they can get. The results have been much better than we would have thought possible.

"Even during surgery, a computer is valuable because you can't show rows of numbers. You need to transform the signals into something that the surgeon can glance up at and immediately know the results of what he has just done. That's best done with colors and shapes. Right now the trend is towards expensive special purpose machines. But with the right software, the Amiga can do

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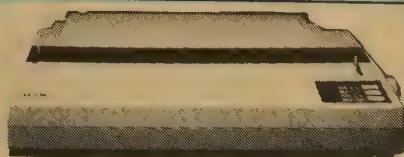
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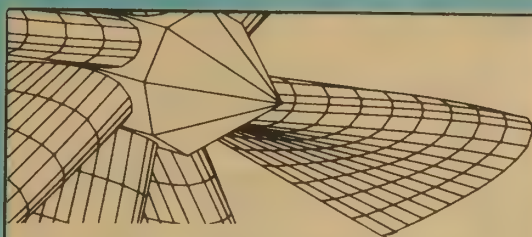


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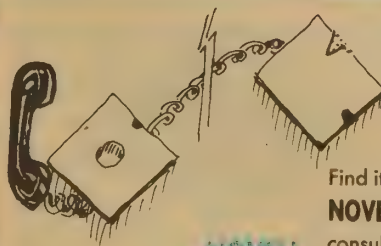
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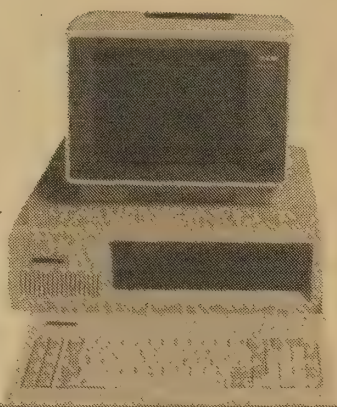
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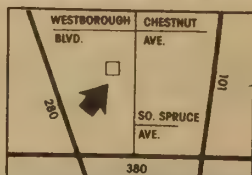


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UCLA's Dr. Ron Harper: "Inexpensive software and hardware enable students to use procedures they wouldn't even have seen before. With digital computer imaging, we'll be able to look at diseases in new ways. We're working with the Amiga to solve problems that were insoluble using traditional methods."

the same thing, but at a much lower cost."

This particular day, the lab is using the VAX GPX for the first time to prepare a patient for deep electrode implants; doctors and scientists are intently studying the patient's digitized brain on the large screen. But sitting directly across from the \$80,000 VAX is an Amiga 1000, which may soon replace the VAX.

Harper originally chose the VAX because of its available software, but then became dissatisfied. He says, "The VAX costs \$80,000, but you also have to get used to other big machine costs, like paying \$700 for the reference book or \$2500 for a word processor. You also get a level of support that is, in a word, poor."

Harper dreamed of having a workstation with high level imaging abilities, but with a very low cost, so that every resident, graduate student and neurosurgeon could have their own workstation. The Amiga is Harper's dream come true. He says with enthusiasm, "Inexpensive software and hardware enable students to use procedures they wouldn't even have seen before. With digital computer imaging, we'll be able to look at diseases in new ways. If you can see the brain in better detail, you get a clearer picture of how to treat it. We're working with the Amiga to solve problems that were insoluble using traditional methods."

Harper considered the Mac II but found it much more expensive than the Amiga. He also considered the \$7,000 DEC workstation, but as his colleague Dr. Frysinger puts it, "With all the add-ons we need, who knows what a complete workstation would cost? That's what is so great about the Amiga — not only is the CPU cheap, but the peripherals are reasonably priced as well. You just can't beat the price of an Amiga."

The only thorns in this rosy Amiga picture of low-cost medical imaging is the need for slightly higher resolution and more bits per pixel display. The Amiga's six bit planes per pixel is adequate in applications like the PET Scan and MRI images, but 8 bit planes are necessary for x-ray use. But Harper says, "To get significantly better output, we'd need something very much more expensive, such as a Pixar rendering engine."

Medical Hardware And Software

The Amiga became much more viable as an imaging computer with the addition of the Ameristar Board, which gives NFS Ethernet networking. Ethernet allows access into different medical databases, imaging devices, and other coprocessors. For example, many of the expensive Magnetic Resonance machines Harper uses have Ethernet connections, so he can readily transfer the image to the Amiga. The typical Magnetic Resonance Images are 512 x 512 pixels, which the Amiga can readily handle. He adds, "The cost of the Ameristar board (\$700) is trivial when you consider that you can instantly transfer information from a half-million dollar computer into the Amiga."

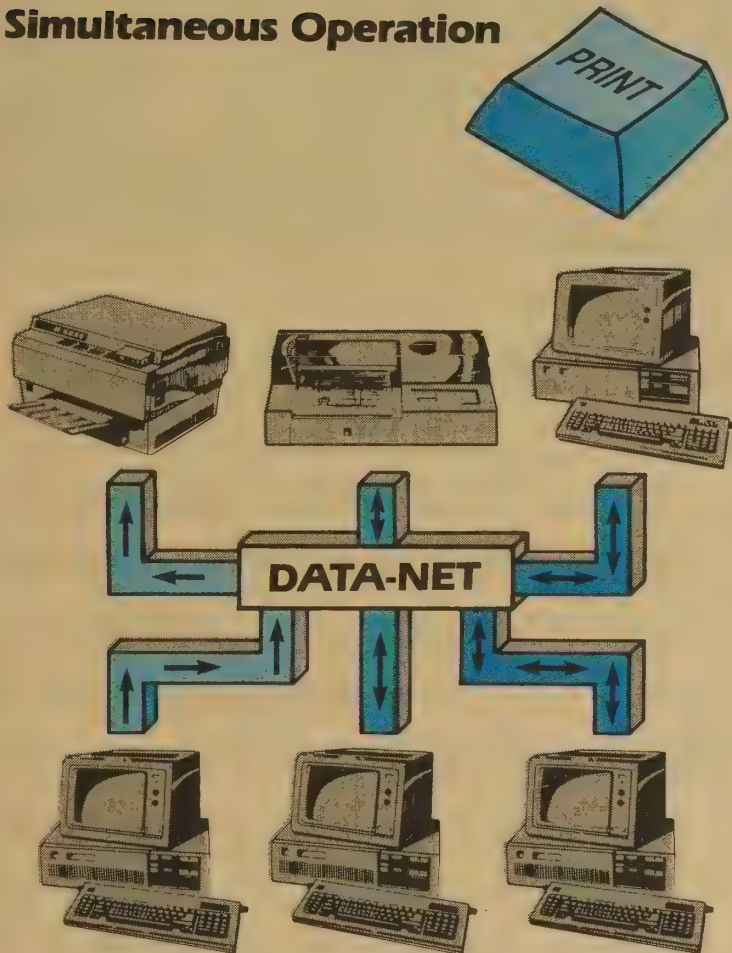
Next to the Amiga 1000 is a bulging case of the latest software disks that rival the contents of any software store. Out of a dazzling array of graphics tools, Harper primarily uses *Deluxe Paint II* as his paint program, *DigiView* to digitize images, an *Easyl* graphics tablet for cleaning up slides, and *Imprint* to output slides to take to conferences. He also found a public domain edge detection program and Fourier transform program on a public BBS; with this free software, he can now advise students how to clean up pictures with edge detection, high frequency or low pass filtering. The Amiga has all the tools Harper needs to reproduce beautiful digital slices of the brain.

But our brains exist in more than two dimensions, and Harper is searching for a way to display the third dimension. The 3-D modeling program, *Forms In Flight*, impressed him greatly. "For \$79, it's ridiculous. I saw a demo and ran right up and bought it. It's astonishing that these things are being done on micros," adds Harper, who is now eager to try *Aegis' VideoScape 3-D* and *Byte by Byte's Sculpt 3-D*.

The brain imaging lab is still in development; they don't have the Ameristar boards to construct their instrumentation. Another promising hardware add-on is the *Mimetics* frame buffer, *ReaSyn* (\$699), for grabbing images from videotape; this yet-to-be-released board works in real

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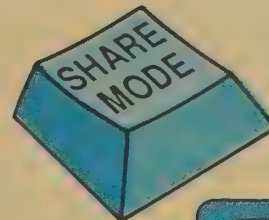
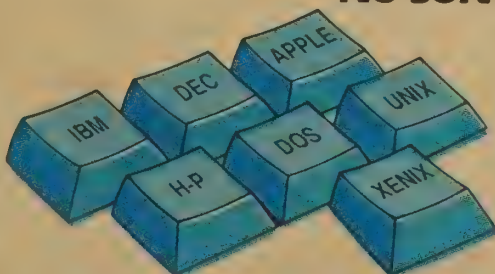


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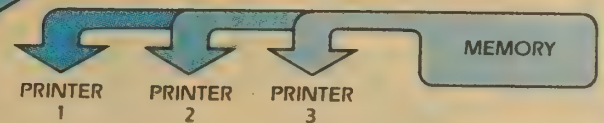
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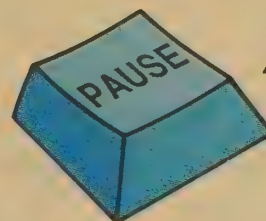
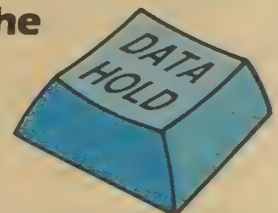
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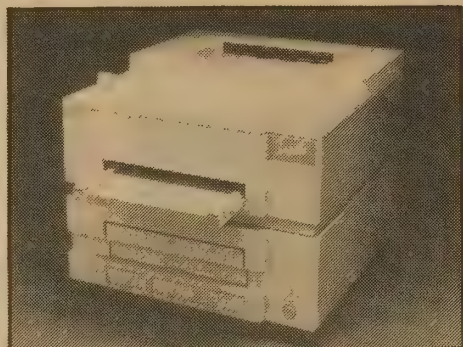
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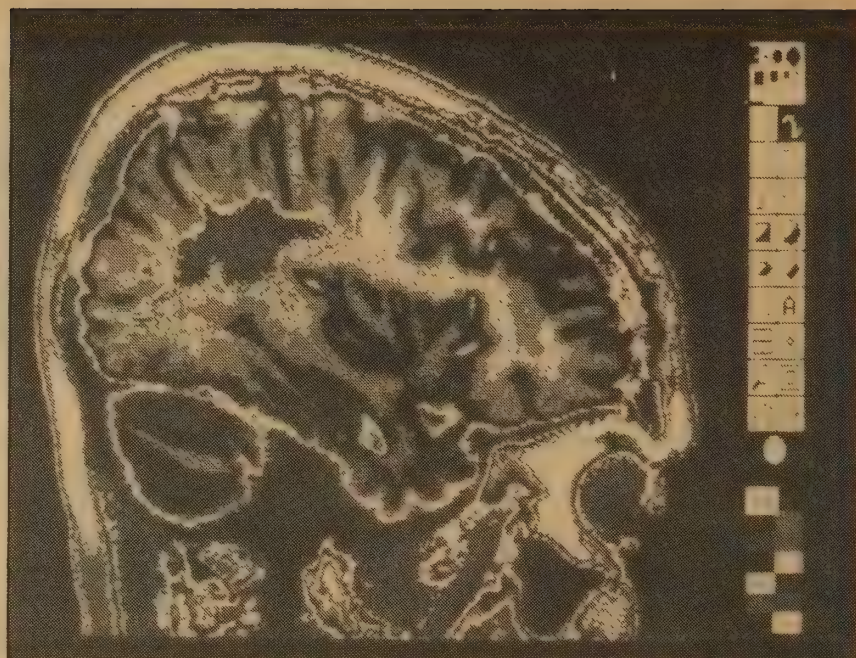


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Harper digitizes images of the brain using DigiView and enhances the images with Deluxe Paint to bring out greater detail for study.

Harper: "Even during surgery, you need something that the surgeon can glance up at and immediately know the results of what he has just done. That's best done with colors and shapes. With the right software, the Amiga can do the same thing, but at a much lower cost than special-purpose machines. But with the right software, the Amiga can do the same thing, but at a much lower cost."

Amiga: The Cost-Effective Solution

time and will offer 24 bit color for an astounding on-screen display of 16 million colors in a 1024 by 1024 pixel display. Harper also plans to add a 68020/68881 accelerator board for added coprocessing speed.

Harper's major software tool is JForth, which is essential for rewriting programs from the VAX PDP11 onto the Amiga. He explains, "The file structures are different, so transferring things to the Amiga will take some work; but it's worth it. The Amiga is blazingly fast; some applications run up to eight times faster on the Amiga than they did on the PDP 11. Having a programming tool like JForth makes the Amiga viable for us."

Besides this plentiful arsenal of software tools, a Harperlab researcher is developing software for data acquisition of cardiac, lung and brain activity for automatic recording on a hard disk. Then the data can be processed after the fact to get a better visualisation for diagnosis.

Harper and his colleagues have been using the PDP 11 to decode the unsolved puzzle of Sudden Infant Death Syndrome, but are switching the research onto the Amiga. A London university took vital sign readings on 7,000 infants in London, 16 of whom died later; Harper received a mountain of tapes on the 16, along with some healthy controls for analysis on the PDP 11. But the PDP 11 has only 64K of RAM, while the Amiga offers nine megs of RAM and a memory expansion of up to four gigabytes with a 68020 chip. The PDP 11 is expensive, with a cost of \$2400 for the graphics card plus \$600 for the monitor. The PDP 11 has 16 colors in a 512 x 512 pixel display with no blitter chip, and Harper maintains, "The Amiga has virtually the same res for a fraction of the cost.

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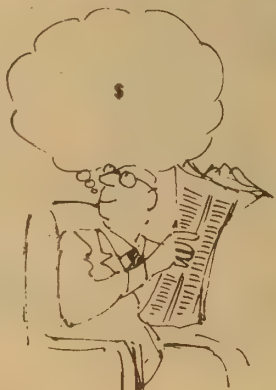
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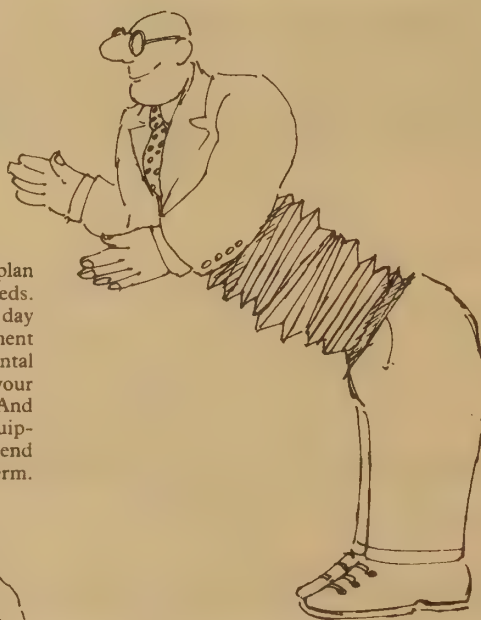
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Amiga As A Teaching Tool

Dr. Robert Trelease is designing a series of anatomy teaching demos on the UCLA Anatomy Department's newly purchased Amiga and Digi-View add-on. Sometimes, a bare slide isn't enough for presentation graphics; with *Deluxe Paint II*, a professor can shade or circle a portion of an anatomical area to point out any areas of interest to his students. Three dimensional animation packages will show things like muscle motion or limb motion, and Harper asserts, "There are some muscles whose motion is very hard to explain with words, and still images just don't hack it. What you'd like to do is show the muscle and limb moving together, or two muscles working in opposition. Three dimensional animation is perfect for this."

Conclusions

In this time of decreasing resources and rising costs, color computers like the Amiga are adding greatly to our store of medical knowledge. Physicians can make better diagnoses on cheaper diagnostic tools to enhance the quality of our life; low-cost Amiga workstations will expose medical students to aspects of physiology that just weren't available using traditional teaching methods. In the words of Dr. Harper, "It's not just evolutionary; it's revolutionary. As a very low cost workstation, the Amiga offers a real bargain. There are still a couple of bargains left in the world. One is a medical school education at UCLA; the second is an Amiga. It truly is a phenomenal bargain."

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Brain Imaging Techniques

In the not too distant past, medical science relied on deep implant electrodes, which destroyed irreplaceable brain tissue, and the traditional CAT scan. But according to Harper, the CAT scan, which x-rays the bony structure, is on the way out; he adds, "They're very good for showing bony structures, but you're running against the clock since the patient can only take so much x-ray bombardment before you start to worry about radiation overdose. The trade-off is how much the CAT scan will show versus how much radiation the patient will receive."

But the new Magnetic Resonance Imaging technique (MRI) is very valuable because the patient is only subjected to magnetic fields, instead of ionizing radiation. With MRI, the doctor can see the soft tissues; for example, with a tumor, the doctor can see the displacement of the surrounding tissues and the built-up fluids. Physicians previously worked with much more invasive techniques, and Harper adds, "We used to have to fill the ventricles with contrast medium to see the spaces in the brain. Now with MRI, that's not necessary anymore."

In Digital Subtractive Angiography (DSA), the arterial vessels are filled with a radioactive contrast medium to show the vasculature of the brain in x-rays. This information is vital in placing electrodes without hitting bloodvessels.

The Positron Emission Tomography (PET) Scan shows brain activity by observing the uptake of radioactive glucose. Radiologists inject a

small amount of the glucose and take readings of the differences between the right and left lobes; then they can actually see where parts of the brain aren't working properly.

The problem for medical science has been how to overlap the various brain scans to show the vessels, the soft tissues and the bone structure in the same image. To provide reference points for the UCLA project, a Mag Res technician will shoot all these scans in the presence of a doctor while the patient is wearing a stereotaxic frame as a visual landmark to line up the different images exactly.

With the introduction of these sophisticated techniques, the future looks very bright for medical imaging of all kinds, and the advantage of using a microcomputer is the ability to layer a number of different scans that each show different brain characteristics. Thus, a DSA, PET, MRI and CAT can all be combined into one image or can be shown side by side to display more than any one of them would show separately.

These computer pictures currently take the form of two dimensional slices through different levels of the brain, but Dr. Zhang, the first neuroscience student from mainland China and considered a brilliant scientist by his colleagues, is working on assembling a full three dimensional reconstruction of the brain. A doctor will then be able to take a "Fantastic Voyage" through the brain on his Amiga to visualize exactly how dysfunctions are occurring and how to treat them.

— Ben and Jean Means

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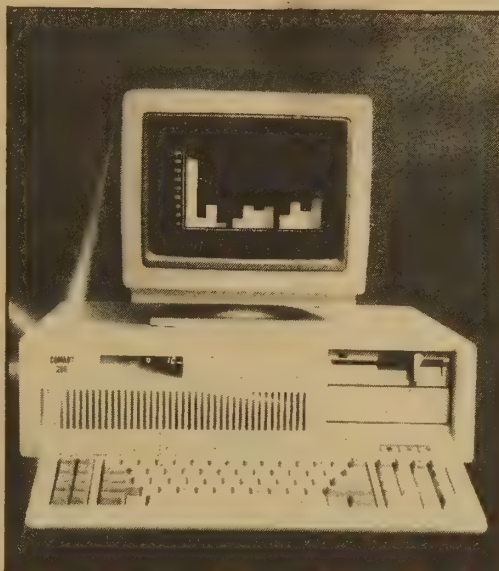
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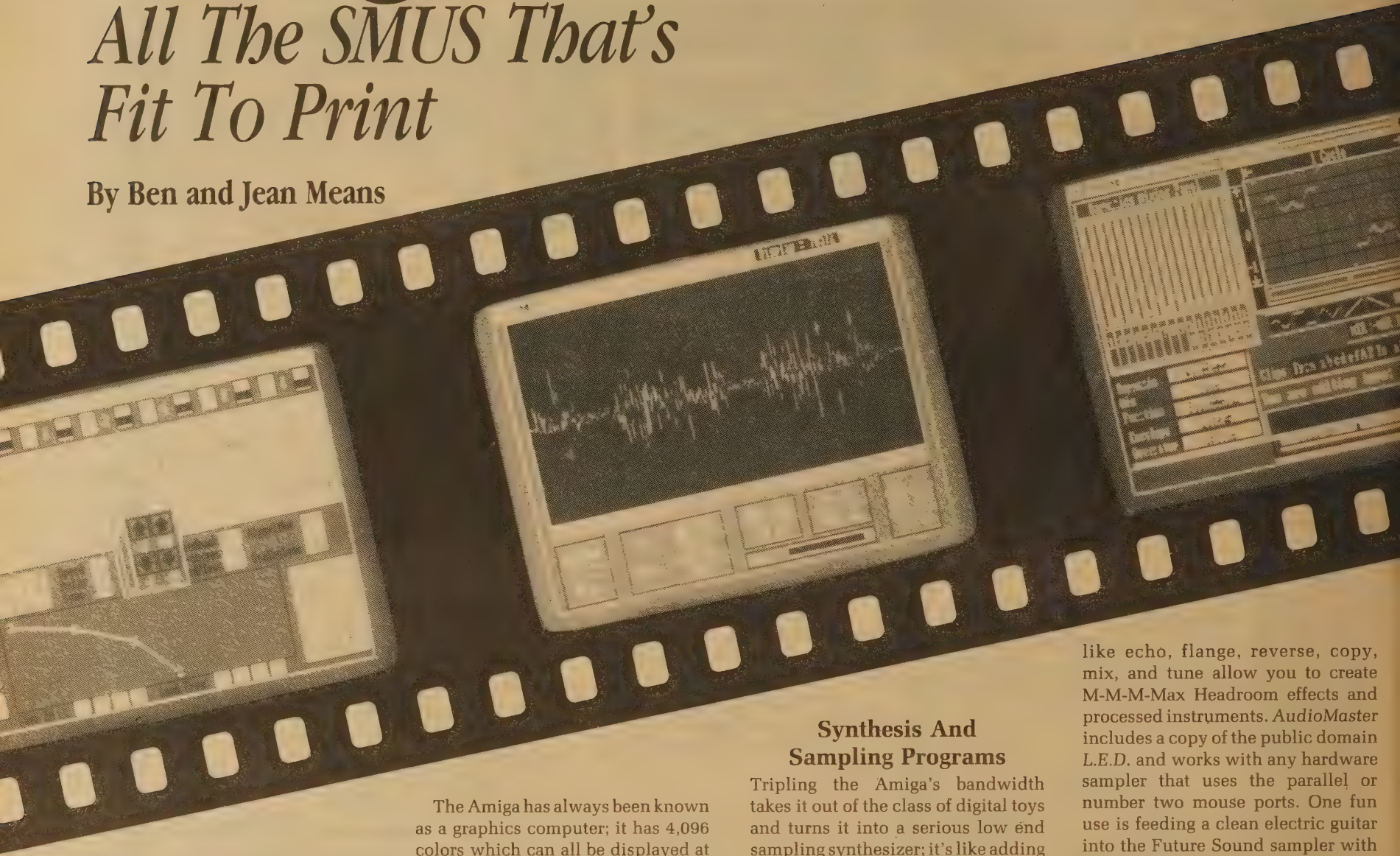
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Amiga Music:

All The SMUS That's Fit To Print

By Ben and Jean Means



It was dreary at the '87 Winter NAMM show; dreary that is, if you were a musician with an Amiga. Trudging up and down the aisles, you'd hear one reason after another why Mac and ST developers haven't ported their fine products over to the Amiga. "Not enough interest in it," said one. "Omega, isn't that a graphics computer?" asked another. One bright-looking young programmer pulled us aside and said, "Will you please talk to our marketing director? I'd love to do some Amiga music programs, but they've got me chained to a Mac!"

Clearly, revolt was in the air. An entire generation of programmers had been afflicted with permanent squints from gazing at nine inch monochrome monitors for too long. When Commodore introduced the low-priced Amiga 500, it began selling like umbrellas in a rainstorm. Thousands of Amiga owners cried out in dismay, "Instant Music is fun, Sonix is neat, but we need professional music programs to fulfill our creative potential!"

The Amiga has always been known as a graphics computer; it has 4,096 colors which can all be displayed at one time through special HAM imaging and a built-in blitter for fast animation; it's the only personal computer to provide a built-in NTSC video out for video production. Those who have been waiting for the Amiga to fulfill its musical potential, however, have not waited in vain. Some of the best Mac, ST and IBM music programs have been ported to the Amiga, and new Amiga-specific products are beginning to appear.

One program that has changed the face of Amiga music single-handedly is *L.E.D.* This public domain program by Mark Riley, who also wrote *Sonix*, turns off the anti-alias filters on the audio output of the A500 and A2000 and extends the Amiga's dismal 4K frequency range to a musically useful 12K. The tradeoff is more treble, along with more aliasing noise, but it's well worth it. The extra high end adds crispness and a live feel that must be heard to be believed. Best of all, since it's P.D., it's free! Unfortunately for A1000 users, A1000 anti-alias filters are hardwired, and *L.E.D.* has no effect on them.

Synthesis And Sampling Programs

Tripling the Amiga's bandwidth takes it out of the class of digital toys and turns it into a serious low end sampling synthesizer; it's like adding a four voice keyboard to your rack.

Now that you have four voices with plenty of high end and the Amiga's powerful custom sound chip, what are you going to do with them? Push them to the max with overdrive and some nifty new software!

AudioMaster by Aegis Development (\$59.95) is an amazing sampling program, and the first that lets you use sound samples larger than the 512K limits of "chip" RAM. Two and a half megs of RAM yield a minute and 40 seconds of music quality sampling at a 20K sampling rate or an ear-boggling four minutes of speech quality sampling at an 8K sample rate. There's even half a meg left over for software applications! Plans are afoot for Amigas to run color animated commercials in several California retail chains; *AudioMaster* will drive a two minute audio track, replete with wild sound effects to rivet the attention of children and terrify unwary shoppers.

AudioMaster has truncate, edit and loop features on an oscillograph-style visual display. Special effects

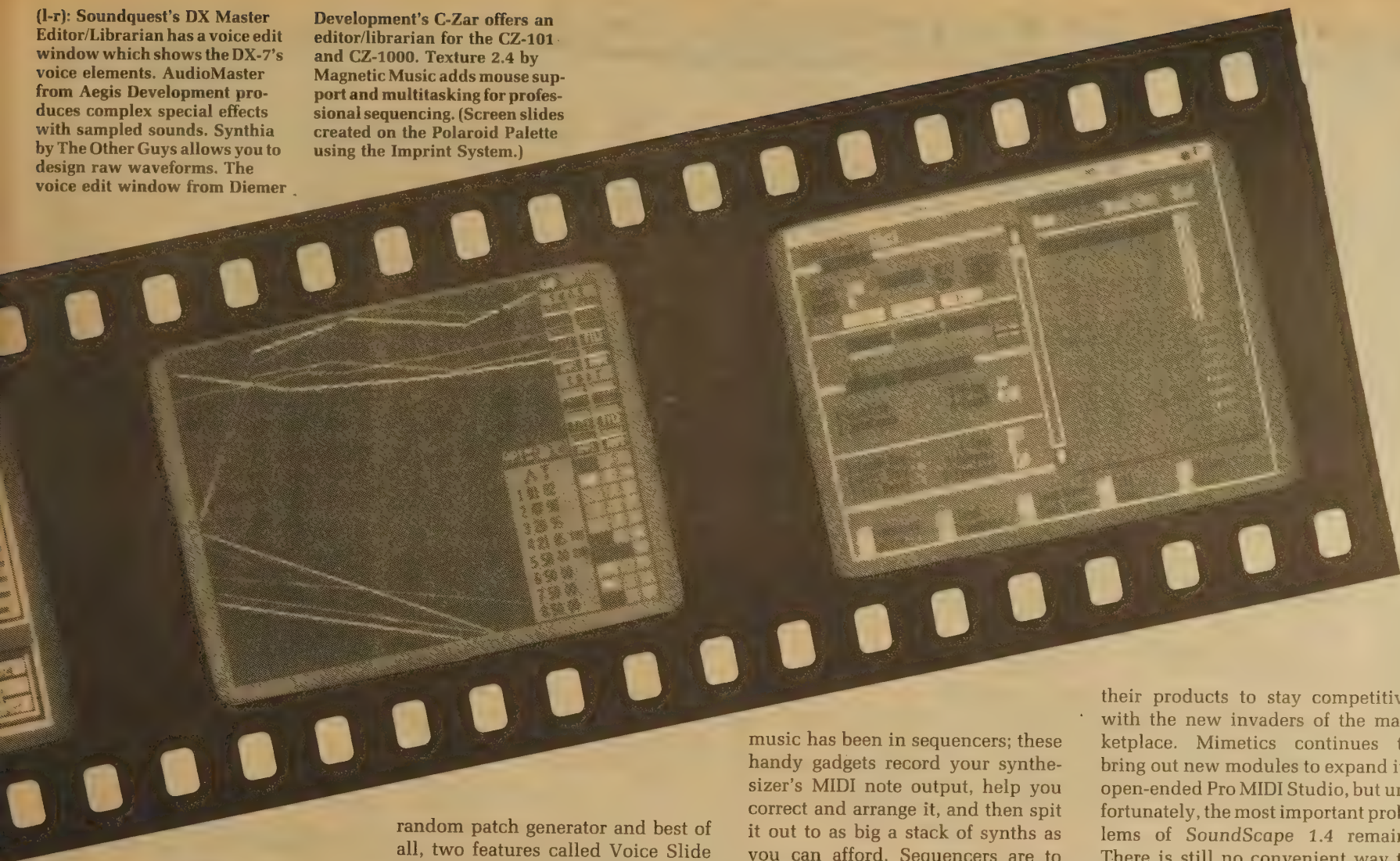
like echo, flange, reverse, copy, mix, and tune allow you to create M-M-M-Max Headroom effects and processed instruments. *AudioMaster* includes a copy of the public domain *L.E.D.* and works with any hardware sampler that uses the parallel or number two mouse ports. One fun use is feeding a clean electric guitar into the *Future Sound* sampler with its input section set to maximum; this yields a very nice distorted rock guitar sound. Then add flange and echo with *AudioMaster* and turn the entire sample backwards. Hendrix never had it so good!

Synthia by The Other Guys (\$99.99) is a synthesizer on a disk that does additive, subtractive, interpolative, plucked string and percussive sound synthesis. Although its approach is not terribly intuitive, it is possible to create virtually any kind of instrument sound with *Synthia*. You can apply the amplitude envelope of a duck to a guitar sound and get a quacking guitar! Create plucked oboes, bowed pianos or whatever other sonic aberrations your music requires and your neighbors will stand. These sounds are stored in IFF format and can be used by any program that uses IFF sounds, such as *Sonix* or the *Mimetics Sampler*.

Editor/Librarian Programs
On the modular synthesizers of the '70s, there was a knob for every func-

(l-r): Soundquest's DX Master Editor/Librarian has a voice edit window which shows the DX-7's voice elements. AudioMaster from Aegis Development produces complex special effects with sampled sounds. Synthia by The Other Guys allows you to design raw waveforms. The voice edit window from Diemer

Development's C-Zar offers an editor/librarian for the CZ-101 and CZ-1000. Texture 2.4 by Magnetic Music adds mouse support and multitasking for professional sequencing. (Screen slides created on the Polaroid Palette using the Imprint System.)



tion. With the colossal complexity of today's Yamaha DX-7, you have to attempt to tame the digital beast with only a data slider and two buttons. Patch programming adds the anguish of Sisyphus to the labors of Hercules. Bo Tomlyn thus makes a handsome living selling synthesizer patches to DX-7 owners too frustrated or confused to create their own.

A well-designed editor/librarian lets you see all the disparate elements that make up a synth sound to help you create sounds more quickly and easily. Then you can organize them in banks and save them to disk for later recall. With today's increasingly complex synthesizers, an editor/librarian program can help make your synth a treasured possession, instead of a projectile out your bedroom window.

Six months ago, there were no Amiga editor-librarian programs for popular synthesizers or samplers. Now there are no fewer than eight.

C-Zar by Diemer Development (\$195) is an editor/librarian for Casio's popular CZ 101 and CZ 1000 synthesizers. C-Zar's visual readout really helps make sense out of the job of programming the CZs six, eight rate/level envelope generators. It also lets you store eight tone mixes, instead of the Casio's one.

Sound Quest has some excellent editor/librarians for the DX-7 (\$145), DX-7 II (\$175), and the Roland D50 (\$160), as well as a generic librarian. These are very well-designed editors with lots of envelope displays for visualizing the complex patches these machines can produce. They have a

random patch generator and best of all, two features called Voice Slide and Voice Mix. Voice Slide takes two patches and creates 30 patches in between (62 on the D50); each succeeding slot uses a little more of the one patch and a little less of the other. Voice Mix randomly mixes any 50% of one patch and 50% of another.

For those of us who don't have the time, energy or interest to become a patch programming wizard, these random and semi-random methods bring hope to a hopeless situation. These restless Canadian programmers will soon be adding editor/librarians for the Casio CZ series, Roland MT-32 and Yamaha TX 81Z.

Mimetics has an unreleased librarian module for SoundScape (\$79.95), which contains three librarian programs: a DX/TX librarian for the Yamaha DX-7, TX-7 and TX816, a Yamaha FBO1 librarian and a CZ-101 librarian. There is also an unreleased DX/TX editor (\$79.95), and an FBO1 editor (\$79.95), but we are wondering, through the cloudy vapor of software promises, when we will see them.

Blank Software has ported over its *Sound Lab* (\$299.95) sampler editor from the Mac. *Sound Lab* gives complete control over editing and looping sounds on the Ensoniq Mirage sampler.

Triangle Audio's Jack Deckard has moved out of the C-64 ghetto and into Amigaville with his FBO1 Data Filer editor/librarian for Yamaha's FBO1 sound module. All good things do not come to an end, and there are more editor/librarians on the way.

Sequencers

The biggest explosion in Amiga

music has been in sequencers; these handy gadgets record your synthesizer's MIDI note output, help you correct and arrange it, and then spit it out to as big a stack of synths as you can afford. Sequencers are to synthesized music what the word processor is to the written word.

This time last year, the musician only had two choices for sequencing on the Amiga: *Texture* by Magnetic Music or *SoundScape* by Mimetics. Now there are three new players in the Amiga sequencer market and rumors of more on the horizon.

M by Magnetic Music (\$200) is an algorithmic sequencing program that uses elements of artificial intelligence. This port-over from the Mac allows you to record your ideas, then play them back while introducing controlled variations of timing and note selection. This lets you generate fresh new ideas from stale white bread themes. *M* caused quite a stir on the Mac market. These kinds of interactive compositional programs are possibly the future of synthesized music.

Dr. T's *Keyboard Controlled Sequencer* (\$225) is an ST portover by David Silver. *KCS* is a versatile sequencer that lets you overlap sequences in open mode or take a traditional drum machine approach in the track and song modes. *KCS* is best known for its many ways to do MIDI editing.

MicroIllusions is bringing out *Music X* (\$299.95), which will be the first attempt at a serious Amiga-specific sequencer since *SoundScape*. If *Music X* lives up to the hyperbole in its pre-release ads, it should be an impressive addition to the Amiga sequencing arena. In addition to sequencing, it also supports keyboard mapping and patch editing.

Meanwhile, Mimetics and Magnetic Music have continued to upgrade

their products to stay competitive with the new invaders of the marketplace. Mimetics continues to bring out new modules to expand its open-ended Pro MIDI Studio, but unfortunately, the most important problems of *SoundScape* 1.4 remain. There is still no convenient way to create multi-MIDI channel songs, and the front end is still much too complex for the casual user. The *Fast Tracker* front end is a lobotomized 16 track sequencer which is fine as far as it goes, but it does nothing to make *SoundScape*'s deeper commands more accessible or friendly.

At long last, Mimetics has released *SoundScape*'s first disk of modules called *Utilities I* (\$49.95). This disk contains eight mini-programs that can be installed in *SoundScape*'s Patch Panel. *Mouse Bender* turns mouse movement into any kind of MIDI information you choose. *Mapper/Splitter* turns any MIDI input into any MIDI output to create keyboard splits, patch mapping and more. *Clock Scaler* lets you drive devices that run in times other than the MIDI standard 24 pulses per quarter note (ppqn). *Frame Counter* creates a hit list for film work, and *System X* is a generic patch librarian. *Fuel Gauge* shows both chip and total system memory, and *Smooth Clocker* is an improved, more accurate MIDI clock. Finally, *Install Modules* builds any or all these modules permanently into the *SoundScape* patch panel.

Coming soon is *Utilities II* with more features than you can shake a drumstick at. *Pattern Splatter* (\$49.95), an algorithmic composition tool, and *Quantize* (\$79.95), a visually oriented quantizer-scaler, have been sitting for months on a lonely shelf gathering dust, while Mimetics procrastinates on their final packaging.

The most desperately needed module for *SoundScape*, however, is one that would organize *SoundScape*'s various elements into one cohesive,

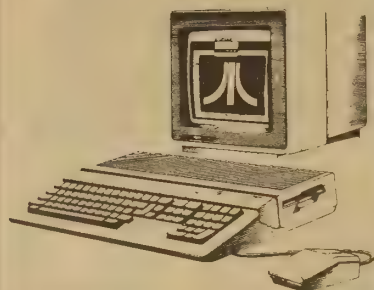
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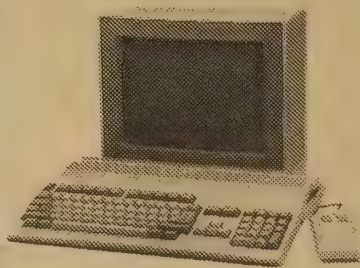
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The door isn't closed on SoundScape, however. Its programmer, Todor Fay, is a prodigy who lives a nearly monastic existence on the edge of the California wilderness. Fay sits at a battered Amiga 1000, one of the first ever made, in front of a window overlooking a mountain and dreams in cerebral silence of SoundScape Version 2.0.

Excellence is often overlooked, and many an Amiga musician doesn't know that Texture, by Roger Powell and Ralph Bellophato of Magnetic Music, even exists.

Texture's second and only other major stumbling block is its cost. Texture (\$299, plus a MIF-AMG adapter at \$125 and a Roland MPU-401 at \$295) is expensive. Texture continues to improve with age, however.

Since its humble beginnings as an eight track sequencer, Magnetic Music has continually upgraded this sequencer. The current 2.4 Amiga version has 24 tracks with a host of fast, easy features to forge an idea into a song while the iron is hot. This speed is crucially important in film scoring, as well as television scoring with its brutal show a week pace.

Although the MPU-401 is expensive for a MIDI interface device, it provides two important MIDI features besides MIDI In and Out. One is an audible metronome without using up an Amiga voice and, even more importantly, it includes FSK tape sync. FSK tape sync allows a sync tone to be laid to a multitrack tape recorder, so that overdubs can be done in complete synchronization. Both Mimetics and Microlusions have promised long-awaited SMPTE sync devices, but until they are delivered, Texture is the only Amiga music product that comes with tape sync.

This IBM port has been updated in Amiga version 2.4 to include mouse support and multi-tasking. Texture uses the parallel port for MIDI, whereas most other music programs use the serial port. The Amiga has the intriguing ability to run two separate MIDI systems simultaneously. One system could be used to drive automated mixing outboard effects and lighting, while Texture is running sequences and patch changes at the same time! If you tried to perform all these functions with one MIDI system, the inevitable result would be MIDI log jamming; your intricate timing cues would be reduced to rubble due to MIDI's limited 31.25 bandwidth. Texture can also run simultaneously with SoundScape to ease your troubles, cure your headaches and access SoundScape's almost unlimited power more easily.

Texture is our sequencer of choice, as well as the choice of Jan Hammer, who used Texture to write those stirring scores for Miami Vice.

Multi-tasking transforms the Amiga computer into a wild and crazy complete music studio. At one point, we were running Texture 2.4, Sound-

Scape 1.4, Music Mouse and the Sound Quest DX7 Master Editor/Librarian simultaneously with no appreciable problems. We could have run a notation editor at the same time, but Deluxe Music Construction Set from Electronic Arts had a read/write error on the disk. With the new A2000 bridge card, you could also run Jim Miller's Pro Composer notation program from the IBM.

Amiga sales have skyrocketed with the introduction of the Amiga 500 (\$695). At year's end, sales had reached the half million mark, and by 1989, reports say Amiga sales will have surpassed the total installed base of C64's and 128's worldwide.

After a long stint as the ugly duckling of music microcomputers, the Amiga is beginning to look like a swan. With its ability to run several programs simultaneously and its four voice sampling/synthesis section, the Amiga has always held musical promise. Now at last, it looks like that promise will be kept. □

Copyright © 1988 by Ben and Jean Means. All Rights Reserved. Ben and Jean Means are Contributing Editors for Music, Computers and Software magazine. Ben is a Complete Idiot who has composed hundreds of ear-splitting songs on his twelve track home studio, to the consternation of his wife and cat. Write to them c/o ZEN YOYO MUSIC on CompuServe, ID #72017,1174. Or call: (213) 434-1451.

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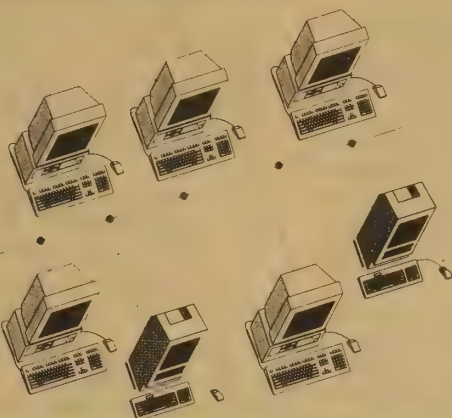
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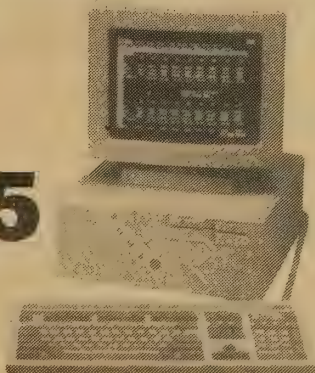
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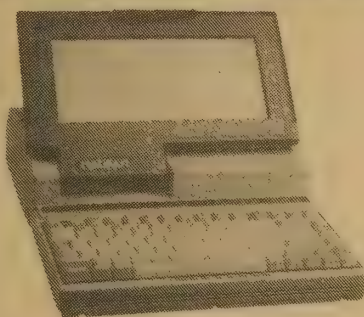
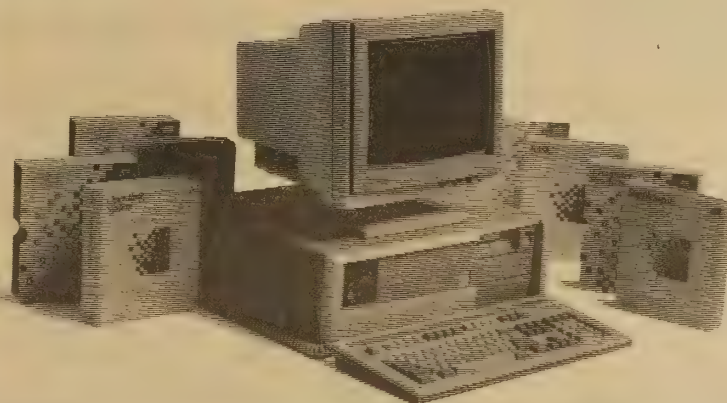
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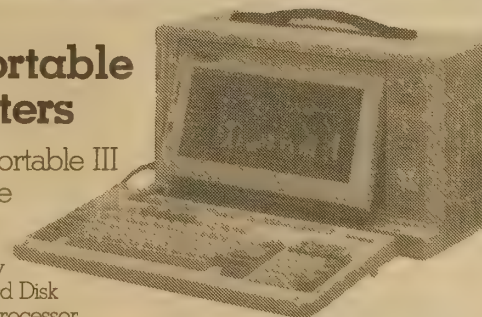
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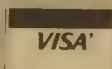
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JForth: Powerful Tool For Amiga Programmers

By Jack J. Woehr

The Amiga, the multitasking desktop dream engine, has led the way once again, with the implementation of a true 32-bit FORTH.

Back in the 1970s, Charles "Computer Cowboys" Moore designed the FORTH programming language. He did this for two reasons. One, Kitt's Peak Observatory needed a programming language that was suitable for controlling rotary motion on a tiny microcomputer, and two, "After I spilled my last rollaway tray of FORTRAN cards, I realized there had to be a better way."

The necessarily compact result was called FORTH, since the computer couldn't handle six-character names. This compactness has characterized FORTH for many people. FORTH, however is a profound and versatile language, rightly characterized as "fourth generation," since all units of FORTH grammar are true objects.

FORTH's marketplace implementation was limited until recently to 16-bit (clone-size) versions of the interpreter/compiler. The descent of the workstation-size processor MC68000 into the micro world heralded the first mass-market opportunity to expand the FORTH standard to 32-bits.

Previous Mac & Amiga FORTHS have been either "old-fashioned" 16-bit implementations treading water in the 32-bit world of the 68000, or token-threaded style forths (where addresses are 16-bit tokens to a lookup-table of 32-bit addresses).

JForth is a full 32-bit FORTH for the 680*0 running the AmigaDOS operating system. AmigaDOS is a full-multitasking environment with a graphic user-interface, which Commodore had up and running about two years before IBM was ready to ship OS/2, to say nothing of the "Vaporisation" Manager...

JForth has to be seen to be believed. If this professional FORTH programmer can be permitted to wax rapturous momentarily, it is a vision of the future of FORTH on the personal computer.

JForth's single-precision math is 32-bit. All stack entries are 32-bit. Addresses are 32-bit. Definitions are aligned on long-word (32-bit) boundaries. Operators are also provided for smaller storage sizes.

So why, you might ask, is he telling me all this? Isn't it obvious that a 32-bit FORTH is, well, 32-bit, so to speak?

Maybe to you, but not always has this been so obvious to everyone in the FORTH community. Lots of us "consumers" of FORTH compilers are glad that Brian Donovan, Phil Burk, Mike Haas and Jim King, the composers of JForth, got the message.

"JForth is JSR — (Jump Sub Routine)—threaded," Donovan attempts to explain. "It compiles a benchmark program like the sieve of Eratosthenes a hundred times faster than some C compilers for the Amiga. The resultant code runs at about 70% of the speed of C."

"JSR-threading eliminates layers between the programmer and the

memory compression for faster execution."

Perhaps he understated the case there as regards memory vs. execution. An early landmark text on TILs, *Threaded Interpretive Languages* by R.G. Loeliger, BYTE Books, 1981, states "The core language can be contained in less than 4K bytes..." Times have changed slightly: JForth's kernel occupies 65 kilobytes. However, the advantage is that program size can be up to full memory model; in the case of an Amiga, eight megabytes! Worried individuals can relax, as many tools are provided for compilation of a minimal final image

**If this FORTH programmer
can wax rapturous, JForth is a vision
of the future of FORTH
on the personal computer.**

machine. It's like writing on the silicon itself."

JForth's interpretive-compiler environment awakes at the click of an icon. The distribution disks contain load files of a number of utilities, including all constants and structures necessary to access Amiga library routines (the thousands of system calls available to the Amiga programmer) including a full implementation of C structures, unions, etc.

JForth accepts BLOCK files with LOAD and standard ASCII text files with INCLUDE. Compiler options include optional compilation, max-inline, and others. The INLINE feature allows called routines to be compiled to a FORTH dictionary entry fully expanded, rather than as subroutine calls, further enhancing speed.

On the future of TIL's, threaded interpretive languages, of which FORTH is the most prominent example, Donovan explains, "The FORTH Standards people are meeting this year; we wanted to show them the kind of standards that were being set in the marketplace."

Haas adds, "The TIL idea is a memory-compression technique. Previously there has been a high price on FORTH in terms of execution speed. Compiling the jumps inline rather than laying down addresses and calling NEXT has sacrificed a bit of

after the program has been developed in a spacious (approximately 125K) development image.

JForth comes with a large manual, containing definitions of most of the programmer-useable words in the system. It also includes:

- JForth's implementation of "C" structures & unions.
- A full explanation of how to make Amiga library calls from FORTH.
- Documentation on JForth's variable-length file interface.
- Documentation on both assemblers (yes, two 68000 assemblers are included, one FORTH-style reverse-polish, one Motorola style.)
- Documentation on graphics routines that the authors have kindly provided to make dealing with Amiga windows much less painful.
- Docs for the Floating Point Package, local variables (not always found in FORTHS!), and a 35-page tutorial on the FORTH language itself, which, combined with JForth's directness, make this package ideal for the intermediate learner.

• For the serious programmer, let us note that the index is very complete!

There are several amusing demos, complete with source. Most have to do with accessing special Amiga features, such as graphics and speech.

The most important "demo" is actually another computer language,

ODE. Phil Burk supplied this object-oriented extension of FORTH on all distribution disks. He and his friends Larry Polansky and David Rosenbloom subsequently collaborated to write HMSL, Hierarchical Music Specification Language, in ODE. HMSL was shown on the second day of the prestigious FORTH Interest Group Annual Convention this year in San Jose.

Burk sends word about new utilities being written for JForth: "The latest news is that Mike has a target compiler working that analyzes compiled code, determines all subroutine calls, copies all necessary code into a separate image, does all necessary relocations, handles DEFER, copies command line into TIB for passing parameters, etc. and save a SMALL image."

"The approximately 160K demo files target compiled without modification into a 29K target. Mike has done even more optimization since. We can now make 5-10K CLI commands in JForth."

"One problem with the target compiler is that it doesn't yet handle compile time address generation, eg.

```
VARIABLE DO-SOMETHING
'DROP DO-SOMETHING !
```

:DOIT do-something @ execute ; won't work because the target compiler, CLONE, doesn't know the contents of DO-SOMETHING are a relocatable address. DEFER works, however. This is usually only a problem with JUMP tables built at compile, ie. ODE!! Run time initialization of a table using ' in a definition works.

"We have not set a date for release of this utility but are accepting sample applications from users who want to get a target compiled application. In return, we get to exercise CLONE."

"Mike has also put together a MODULE facility that allows delinking and relinking of include file code to avoid having all those structures laying around in the dictionary."

The FORTH community and the Amiga owner can sleep more soundly tonight, knowing that Delta Research is on the job! (Delta Research, 4054 Wilkie Way, Palo Alto, CA 94306. 415/856-3669. Two disks, 350 page manual. Call for current price.)

Jack Woehr is a FORTH programmer currently employed at Computer Resource Consultants, 2180 Bryant St. San Francisco CA 94110, (415) 641-5100. He can be reached via email: well!jax@lll-crg.arpa or on the GENIE FORTH Interest Group Roundtable, GE Mail jax.

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*Introduction by Stewart Brand,
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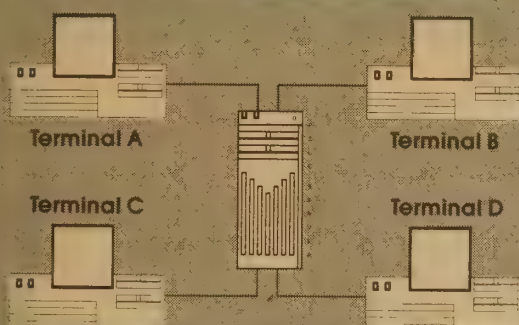
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74

By Robert Beauchamp

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By Jim Wolcott

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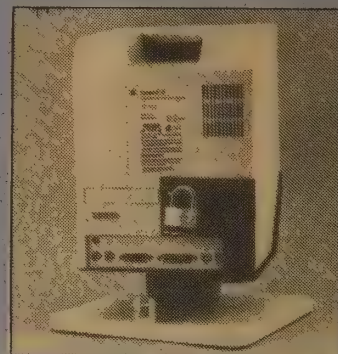
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A new magazine exploring the potential of hypermedia.

Macintosh Buyers Guide 92

New hardware, software and books to improve your Macintosh productivity.



Stepping Out

An Inexpensive Alternative To The Full Page Display

By Robert Beauchamp

As desktop publishing becomes more and more popular, and as more and more vendors enter the market with their high-priced printers, scanners and full page displays, it's easy to feel like a street urchin with his nose pressed up against the toy store window. So many wonderful toys, and so little money.

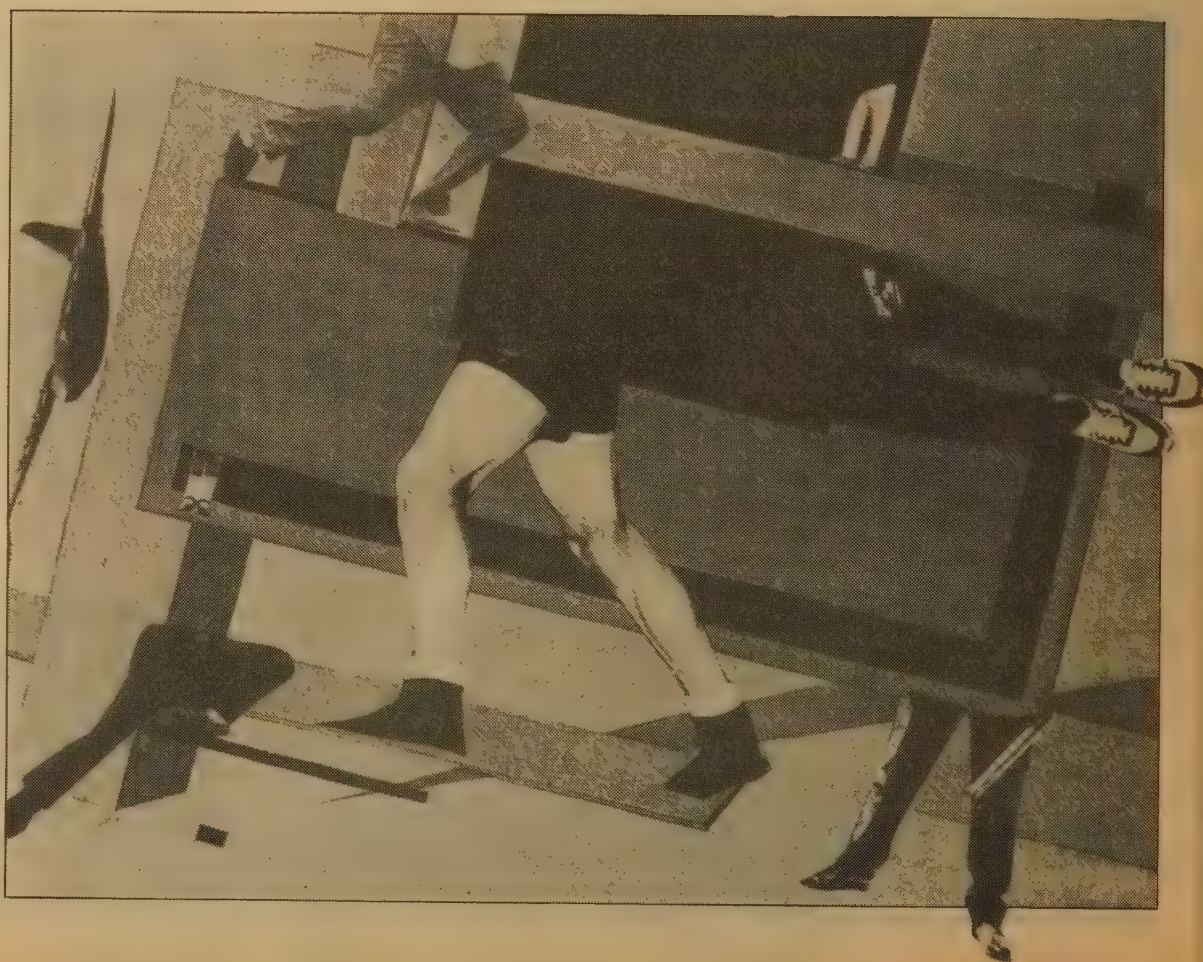
If your Macintosh budget resembles a pocket with a hole that your last nickel just fell out of, you probably have resigned yourself to making do with the equipment you have and thumbing through the magazines saying to yourself, someday...someday, maybe.

This is especially true of full page displays. There are so many excellent products, but how can you justify buying one when you're still saving up for a laser printer and need to upgrade your memory?

For those who find themselves frustrated by the Mac's small screen when doing desktop publishing, spreadsheets or using paint programs, *Stepping Out*, *The Macintosh Screen Extender* is an inexpensive software solution to a common problem — and the only solution we know of for under \$100.

As often happens in this industry, the technology developed to solve one problem can also go on to solve others. Berkeley System Design, the makers of *Stepping Out*, developed a technology called in-LARGE to aid visually impaired people in using the Macintosh. They soon discovered that that the same process could be used to simulate a full page display.

Stepping Out tricks your Macintosh into thinking



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For those who find themselves frustrated by the Mac's small screen for desktop publishing, spreadsheets or paint programs, Stepping Out is an inexpensive software solution to a common problem — and the only solution we know of for under \$100.

it's writing to a full page screen display. While Macintosh applications ordinarily draw directly to the screen, *Stepping Out* fools the Mac into drawing onto a larger screen in the Mac's memory. *Stepping Out* then copies parts of the illusory big screen to the Macintosh display. The copying is so fast that when you move your cursor the movement appears smooth — instead of having to slowly scroll through a document you zip across the "full screen" in an instant.

In addition to letting you zip around a "full" screen, *Stepping Out* lets you reduce any part of the screen you wish two to four times smaller and enlarge any part from two to sixteen times larger than the original. This makes it easy to see a miniature of your page layout, as well as do pixel-by-pixel detail work on your paint files.

You can customize the size of the page to any size you need. *Stepping Out* defaults to 572 x 720 or 8" x 10", the standard paint file screen size. Other common sizes are 640 x 864, the typical size of a full page display and 1024 x 1024, the typical workstation display size.

Stepping Out can be used with almost any Macintosh software product. Some products, however, do not take advantage of full screen capabilities. *MacPaint* and *MacWrite*, for example, make assumptions about the screen size that *Stepping Out* cannot change. If you're not sure if *Stepping Out* will work with your favorite program, call Berkeley System Design; they will be happy to answer any of your questions.

Since it can be used with so many products, *Stepping Out* can play a role in a variety of computer tasks. We used *Stepping Out* with paint programs such as *SuperPaint* and *Cricket Draw*, in word processing with *MS Word*, in page make-up with *PageMaker* and even with the science fiction game *Reach For The Stars*. We encountered no problems in using *Stepping Out* with any of these applications, and were impressed by the added productivity it offered in using these programs.

Paint Programs

One of the most frustrating aspects of using paint programs on a Macintosh is the small screen area you have to work with. Scrolling, especially with complex paint files, can be tiresome. Moving from the regular screen to the fat bits screen is also slow. You go to fat bits to do pixel-by-pixel detail work, and must return to the regular screen size to see

what effect your changes have made on the picture. Paint programs, therefore, are an ideal environment for *Stepping Out*.

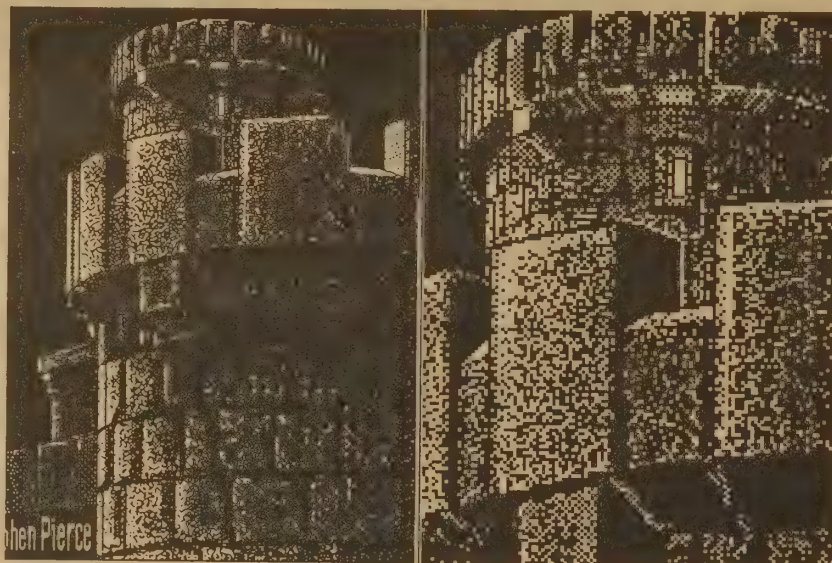
Before starting up your paint program you double click the *Stepping Out* icon from the menu. While memory resident, *Stepping Out* is not like a desk accessory that automatically boots when you turn on the computer. You must start it up whenever you power up. It will, of course, remain operational until the computer is turned off. Some may see this as a disadvantage, but it makes sense in that you may not want to use *Stepping Out* every time you turn the computer on.

After clicking the icon *Stepping Out* takes you to a dialog box that holds the screen size information. If you have already set the screen size you want, ignore this, and *Stepping Out* returns you to the desktop. If you wish to change the screen size, you click once and then fill in the appropriate blanks on screen.

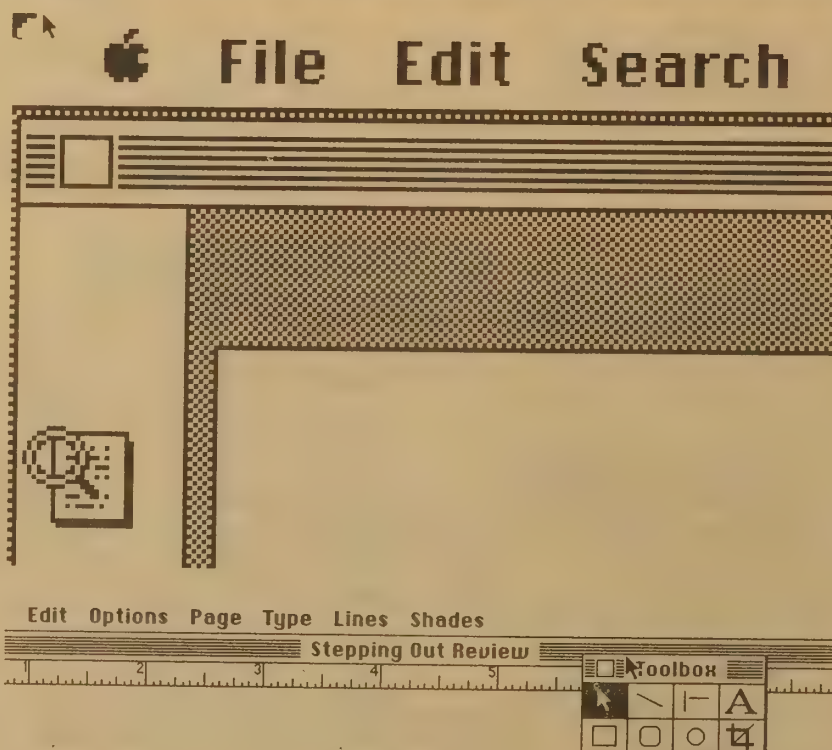
Once back to the desktop you'll notice that the desktop has grown larger. The disk icons and the trash can icon and some dialog boxes are off the Mac's screen. By moving the cursor you can find these icons on the outer edges of your extended screen.

Once *SuperPaint* is open the screen looks somewhat different than usual. As with the desktop, some menus are off the screen. To find the patterns bar you must move the cursor all the way down to the bottom of the "full page." This takes some getting used to at first, but the major benefit of *Stepping Out* is that beautiful expanse of white space on which to draw.

It takes a mere fraction of a second to move from the top of the full page to the bottom, even if there is a large and complex drawing on the screen. Compared to the amount of time it would take you to scroll this distance, it is well worth the slightly awkward positioning of the dialog boxes and menus.



Stepping Out lets the user enlarge the area around the cursor. This split screen configuration is especially useful when doing detailed pixel work in programs such as *SuperPaint*.



The user can make *Stepping Out*'s enlarged view fill the entire page. *Stepping Out* allows the user to enlarge the screen from two to sixteen times as well as reduce the screen two to four times.

COMPUTER MUSIC NEWS

Jam Session
By: Brøderbund Software
For: Macintosh with at least 512K of memory. A second disk drive and external amplification are optional.
List Price: \$49.95
Reviewed By: Robert Beauchamp

A lot of people never take up music because the hard work and skill necessary to master an instrument is simply too intimidating. Even if

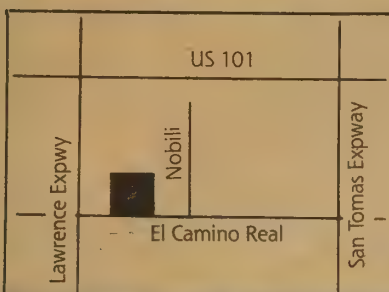
and a country band complete with barn, haystack and clucking chickens.

Although you don't need any musical training to play *Jam Session*, it has certain features that will appeal to those who do. It comes with a built in synthesizer and the ability to edit riffs. You can also choose to show a piano keyboard at the bottom of the screen, letting you know what notes you are playing.

There are a number of recording features:

Stepping Out's full screen extension capabilities make working in page make-up programs such as *PageMaker* much easier. By designating the screen size you wish to emulate, *Stepping Out* tricks the Macintosh into thinking it's writing to a full page display.

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When you wish to see the position of your picture in relationship to the page, you can instantly reduce the view by pressing option-command-space bar. You will see either a two- or four-fold reduction. To get the other reduction size press option-command-x. Unlike some programs *Stepping Out* doesn't use the full screen to show the reduction. It splits the screen in two, letting you see where your cursor is on both screens.

This split screen feature proves to be extremely useful when you want to do detailed work with individual pixels. On one half of the screen is the enlarged view and on the other the normal view. Since the arrows on both screens are pointing at the same pixel, if you change a pixel on the enlarged version you can see it change on the normal view.

To enlarge the view you simply you press option-command-x. Each time you press x, the screen enlarges the area around the cursor by another factor. You can do this until you find an enlargement that you are comfortable with.

Once you know the size enlargement you like to work with you can also simply press option-command and a number from two through sixteen. This enlarges the area from two to sixteen times.

To return from a reduced or enlarged view to the normal view you press option-command-space bar.

For those truly proficient with working with individual pixels, you can make the reduction or enlargement fill more than half the screen. You press option-command-R and then use the mouse to move the line marking the outer edge of the magnificent area. You can cover any amount of the screen you desire.

Desktop Publishing

The major reason most people purchase full page displays is to supplement their desktop publishing system. Full page displays offer convenience and perspective in an often-hurried production schedule.

The time saved when working with a PageMaker document is amazing. Since the work area can be adjusted to the exact size of a PageMaker page, there is no scrolling, only the effortless glide of the cursor across the document.

Stepping Out also offers these advantages. The most dramatic impact we saw on productivity was in this area.

Page make-up programs like *PageMaker* are big and unwieldy. They take up a lot of memory and scrolling from the top of a page to the bottom can be excruciatingly slow. The small Mac work area makes it impossible to get a grasp of what your entire page looks like. Since *PageMaker's* whole page view only offers grey bars that represent type

rather than the type itself, this also makes it difficult to see exactly what your page looks like. You are trapped between too much or too little. While *Stepping Out* does not possess all of the features of an actual full page display and accompanying software, it does help solve these two major problems.

It is necessary to emphasize the ease in which the cursor can move from one part of the page to another. The time saved when working with a *PageMaker* document is amazing. Since the work area can be adjusted to the exact size of a *PageMaker* page there is *no scrolling*, only the effortless glide of the cursor across the document.

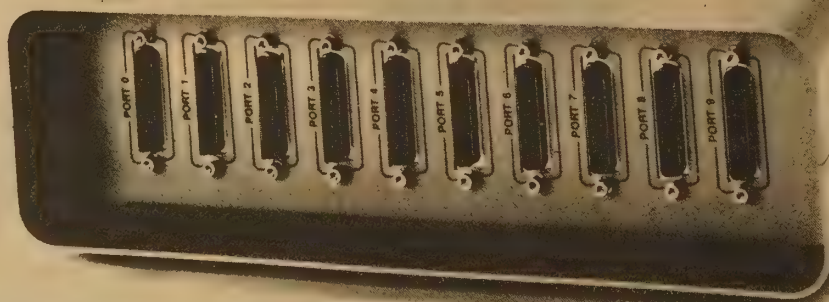
You can even make the *Stepping Out* screen large enough to accommodate two facing pages. This is not recommended, however, for everyday cutting and pasting, as menus and tools are too far away from each other to be used conveniently.

Conclusions

Stepping Out is a little product that makes its presence felt in a big way. While offering a boost in productivity it only takes up 18K on your disk and uses around 80K of RAM, depending on the screen size you choose. It does take a little while to get used to the added screen size, and there are moments of panic when your Mac seems to freeze due to a dialog box that's demanding a response being off the screen. However, the small amount of effort expended with *Stepping Out* will be more than rewarded with time saved when working with applications.

In this world of increasingly sophisticated and expensive equipment, *Stepping Out's* price of \$95 means that it is not only a great product but also a great bargain. (Berkeley System Design, 1708 Shattuck Ave., Berkeley, CA 94709. (415) 540-5536. *Stepping Out* is for The Macintosh 512K, Plus and SE.) □

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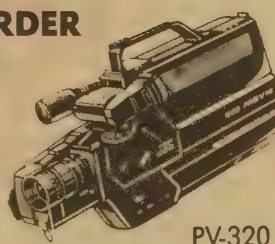
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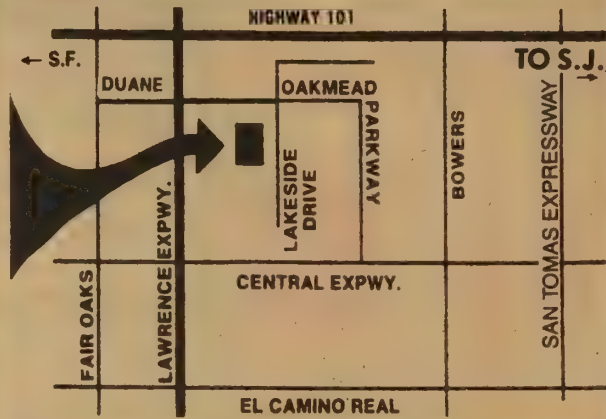
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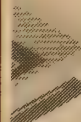
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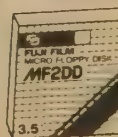
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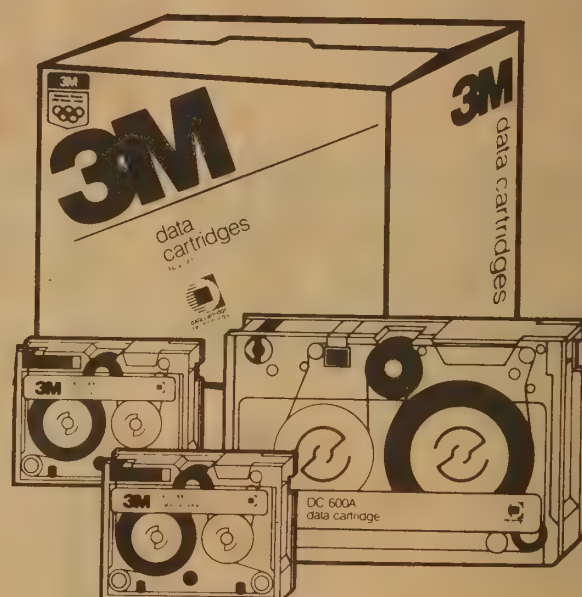
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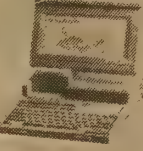
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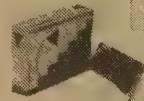
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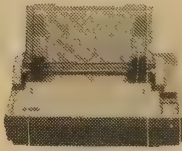
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The 4th Dimension Database

By Jim Wolcott

In the Macintosh software world, 1987 may well be remembered as the year of the relational database. The year saw the introduction of Ashton-Tate's *dBASE Mac*, Borland's *Reflex Plus*, Nantucket's *McMax*, and Acius' *4th Dimension*. Of this distinguished group of products, *4th Dimension* was perhaps the most anxiously awaited — and most controversial — piece of software ever to hit the Mac screen.

4th Dimension's evolution is as interesting as the program is powerful. French programming prodigy Laurent Ribardi re conceived *4th Dimension* while developing customized applications for business. The early fruits of his efforts were astonishingly good: in fact, good enough to catch the attention of the powers-that-be at Apple Computer, Inc. Apple joined into the development effort, and, about two years ago, the first versions of *4th Dimension* appeared on the French market.

Apple's intention to bring *4th Dimension* to the United States brought an uproar from the Macintosh development community. Ashton-Tate, well along in its creation of *dBASE Mac*, issued sufficient complaints that Apple elected to drop its plans to market *4th Dimension*. In the end, the rights to the program reverted to the original developers: ACI of France. ACI elected to set up a U.S. subsidiary (hence the name, ACI, "US"), and found little resistance in recruiting two of Apple's key personnel: former Software Evangelist Guy Kawasaki as president, and the former head of Apple's Tech Support Department, Scott Knaster.

Emerging from this firestorm of controversy, *4th Dimension* was an immediate hit among Macintosh database programmers on its release last summer. And with good reason: the power and features resident in *4th Dimension* border on the unbelievable.

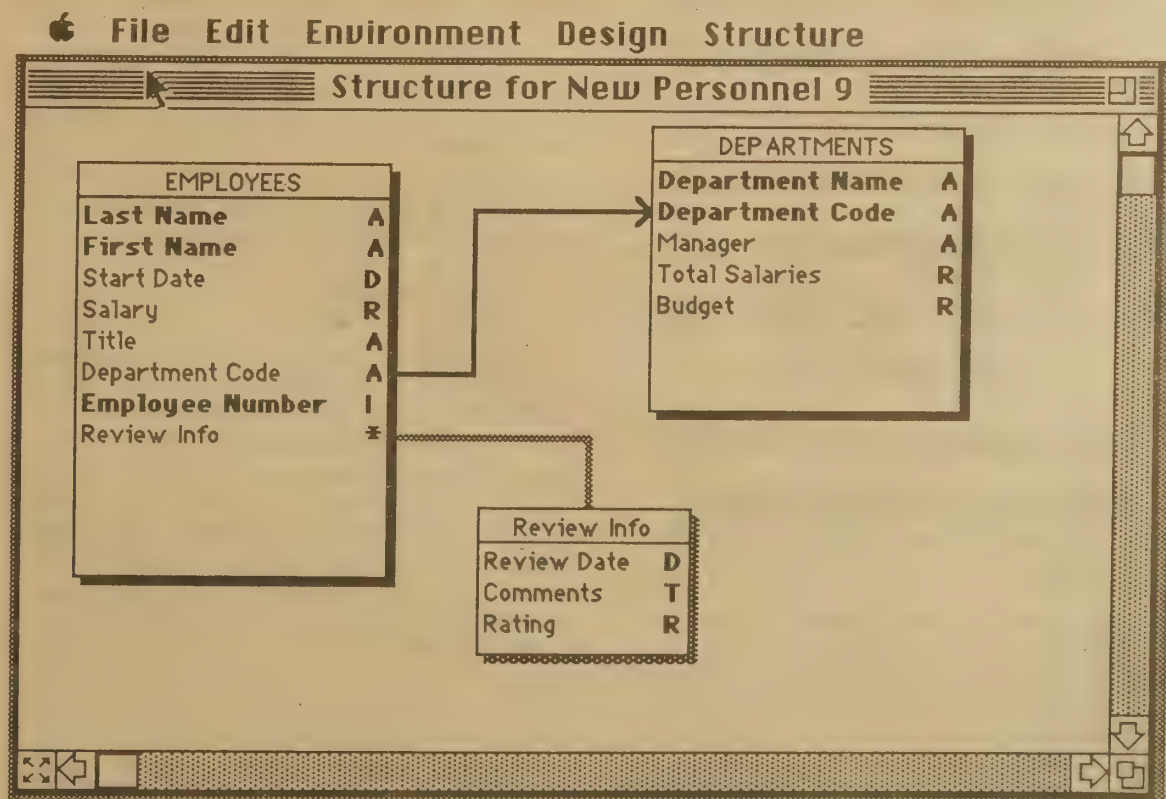
With sufficient RAM memory (and a big enough hard-drive), *4th Dimension* will support up to 16 million records, with 99 data files accessible at the same time. Each file can have up to 511 fields, and up to 511 sub-files. In addition, each sub-file can support up to 511 sub-fields.

The features list goes on. For data input and output, "layouts" are employed, with access of up to 32,000 user-defined object-oriented layouts. A hierarchical password system allows 32,000 levels of data security. Sophisticated import/export filters are available, for data interchange in SYLK, DIF, and text, for Macintosh, IBM PC, and mainframe systems. *4th Dimension* can also take control of the Macintosh's serial ports for data input and output.

More important than the power and flexibility of *4th Dimension* is its ability to create "stand alone" applications. *4th Dimension* incorporates a sophisticated programming language, including more than

200 built-in routines and operators. Once a database has been programmed in *4th Dimension*, the user can merely double-click to enter a custom program — indistinguishable from any other Macintosh application. Once the database is launched, the user can be presented with pull-down menus to access the various facets of the program. In a business environment, employees don't need to be trained to run *4th Dimension*: they merely pull down the menu relating to the task at hand, and enter the required data.

Last, but not least, is *4th Dimension*'s multi-user capability. When connected over an AppleTalk, or EtherNet network, *4th Dimension* allows data-entry



Sample database Structure in 4th Dimension, showing Linked Files.

or report-generation from any point of the system, with password security to make sure data doesn't fall into the wrong hands.

Just how powerful is *4th Dimension*? One developer created a *4th Dimension* application for travel agencies in Belgium. Custom pull-down menus accessed information about flight times and seat assignments. "Static" information about flights was stored on the Mac's hard-disk drive: "Dynamic" information (such as availability of seats) was stored in a VAX. *4th Dimension* would automatically retrieve information from its files, or send requests to an Oracle database system on the VAX. Oracle would then query the VAX, and send back the requested data for *4th Dimension* to display. The operation was completely transparent to the user, who didn't have to worry about anything other than the pull-down menus of *4th Dimension*.

A computer retailer in the San Jose area is putting the finishing touches on a *4th Dimension* system to handle point-of-purchase and inventory control. Merchandise in the store is tagged with bar codes to identify product code and price. The bar codes are scanned with a light wand, which enters the price, product description and quantity directly onto the invoice. When ringing the sale, the clerk uses a magnetic strip-reader for the customer's credit card. This *4th Dimension* application is programmed to identify the type of credit card, then signal a modem to automatically dial the corresponding number for the credit authorization — which is transferred onto the transaction invoice. As the sale concludes, the store's inventory is adjusted, and *4th Dimension* prepares to re-order merchandise as required. All this from a single Macintosh SE on the front counter!

Into The 4th Dimension

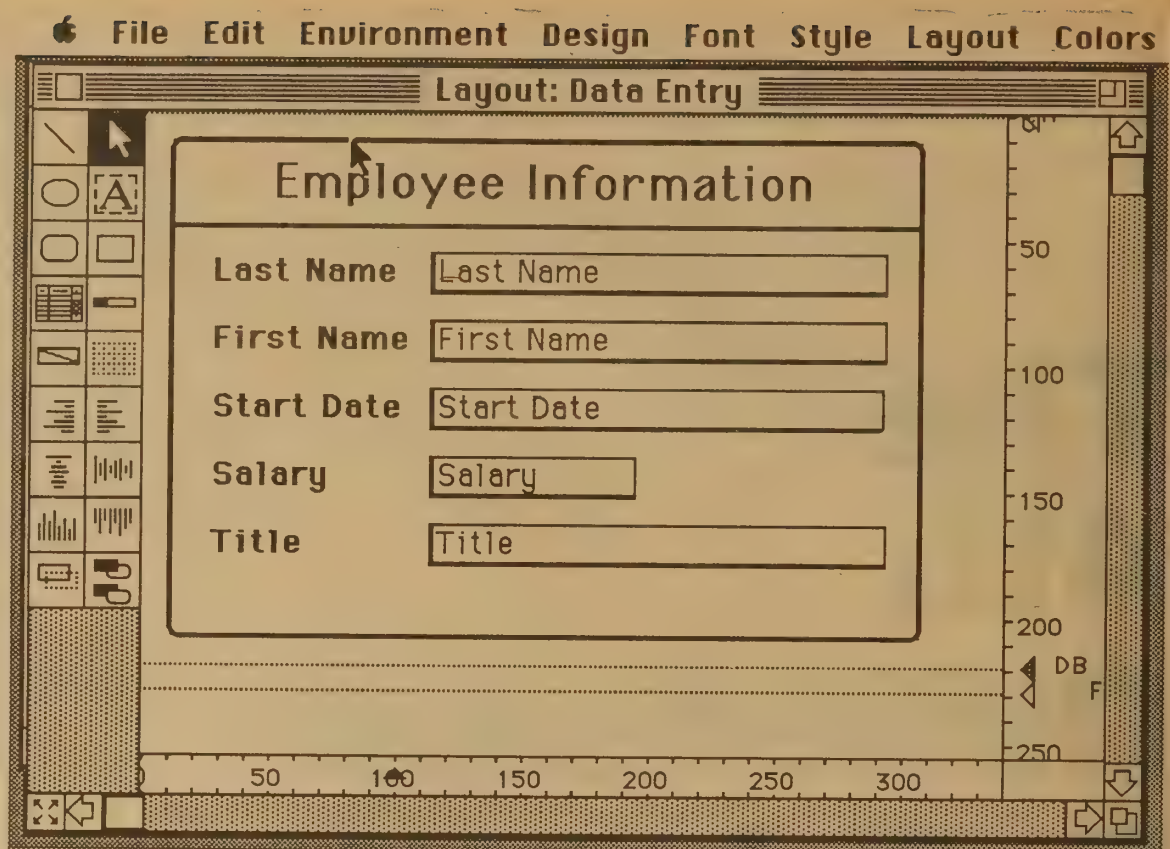
For all its power and complexity, it's deceptively easy to set up a simple database with *4th Dimension*. The program operates on three different levels: the Design level, the User level, and the Custom level.

Databases are actually created at the Design level. Opening a blank (new) database file will bring you into the Design level, with the "Structure Editor" displayed on the screen. In the Structure Editor, the files within the relational database are defined, along

4th Dimension was an immediate hit among Macintosh database programmers on its release last summer. And with good reason: the power and features resident in 4th Dimension border on the unbelievable.

with the attributes of the fields within the files.

To create a new file, simply pull down "New File" from the Structure menu. Double-click in the blank area below the file to create a new field. As each new field of a file is called, a dialog box asks for the attributes of that field. Each field can be defined as alpha, text, real, Integer, Long Integer, Date, Picture, or as a sub-file. Along with those attributes, the field can be assigned as "mandatory," "display only,"



The Layout Editor is object-oriented, and contains simple drawing tools. Color is also supported for Layouts on the Macintosh II.

"Can't modify," "Indexed," "Unique," or as a field to be selected from a list of "Standard Choices."

Once the Files and Fields are specified, creating Links between Files is a simple matter of "clicking" on a Field, and "dragging" into the desired Field of another File. *4th Dimension* supports an unlimited number of Links between Files.

Next, the Layout Editor is called to create input and output Layouts for the data.

Eight standard layouts can be selected, or a custom layout can be created for the data fields. The window for the Layout Editor behaves like standard Macintosh "draw" programs, and can be used to define or modify the input/output for the data fields. Control buttons can also be created and defined, and used to access procedures from *4th Dimension*.

Finally, the Procedure Editor is called to write the procedures which manipulate the data. The Procedure Editor offers the option of creating procedures either as a flow-chart or a listing of commands. However, once a procedure has been created in one form, it can't be read or translated to the other. Since *4th Dimension*'s procedure language resembles Pascal, most programmers will probably opt for the listing format.

The window for the Procedure Editor is divided into four areas: an area for editing the Procedure, and three boxes for automating the programming process. To the left is a list of "keywords" for programming; to the center is a listing of all the fields for the file(s) which compose the database; to the right is a listing of "Routines" which can be called into the Procedure program. As the database grows in complexity, Procedures can be added to the Routines list, allowing Procedures to be called as sub-routines for other Procedures.

The Procedure language is the key to *4th Dimension*'s power. Procedures can call different pull-down menus, as appropriate for the task at hand, and can "disable" (gray-out) various items on those menus. Likewise, the Procedures define the actions for control-buttons contained in the data Layouts. As each line of a Procedure is created, *4th Dimension* tests the syntax and alerts the user to incorrect statements. A de-bugger is also included: if a problem is encountered in running a procedure, the de-bugger will flag the line where the problem occurred.

The Procedure Editor offers the option of calling program routines from an external source. Sub-

outines compiled in Pascal or C can be called and executed, and will then return control to *4th Dimension*. This makes it possible to take advantage of programs more powerful (and faster) than *4th Dimension*'s internal language. However, the size of these external routines is limited to less than 32K.

For database applications where security is an issue, a Password Editor can control access to vari-

This is not a product for the faint-of-heart, or for the casual user looking for a relational database. 4th Dimension is a programming language, written by a programmer, for programmers, and made to appeal to advanced programmers.

ous parts of the program. The Password Editor can assign passwords for the Menu Editor, making various menu selections password-dependent. Passwords can also be assigned to input/output layouts, making it impossible to display data without the correct password. Since the password structure is hierarchical with up to 32,000 levels, it's possible to precisely define access to various areas of the database. The Password Editor also tracks the date and time each password was last used, and the total

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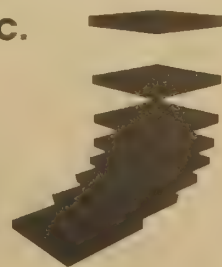
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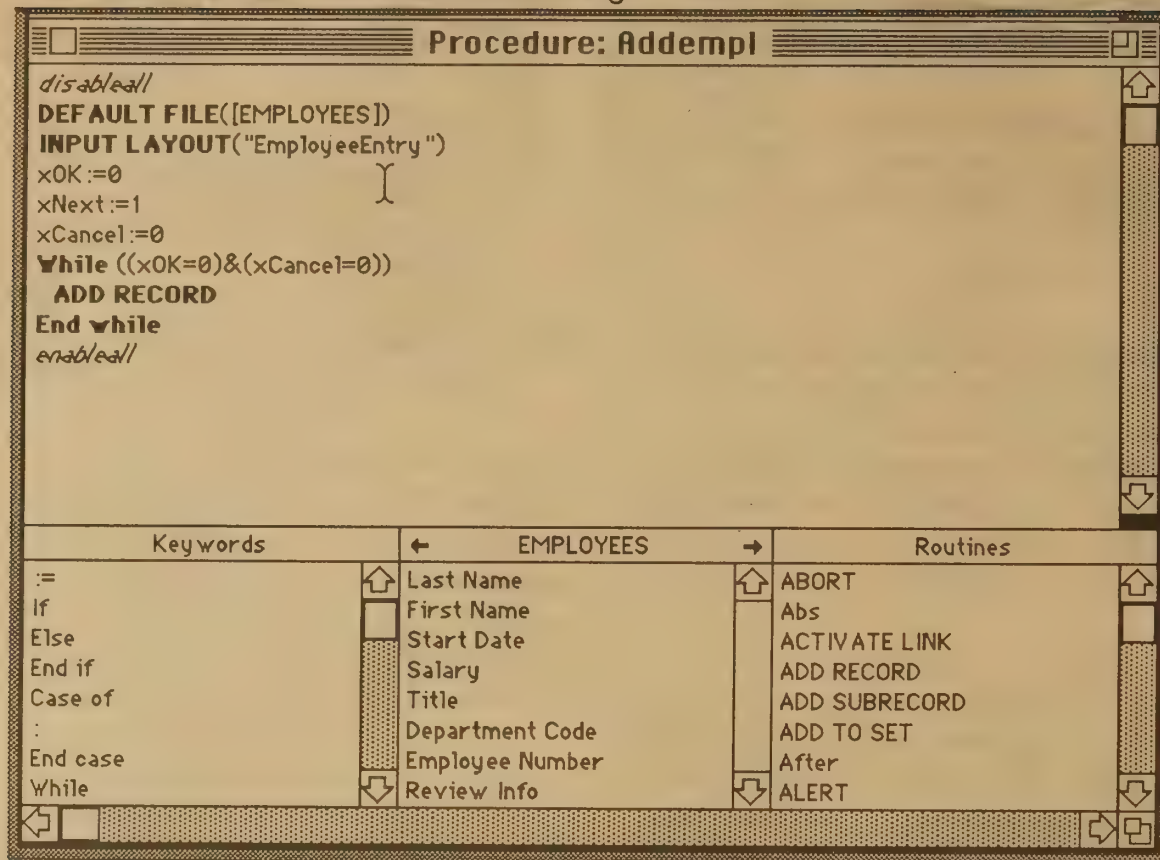
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The Procedure Editor displays 4th Dimension's programming language, which resembles Pascal.

number of times each password has been used.

The User And Custom Levels

Once a database has been successfully created in the Design level, it can be run in either the "User" level, or the "Custom" level. The User level is a friendly environment, with pull-down menus for familiar database functions: search, sort, report, graph, chart, etc. For most database requirements, the built-in functions of the User level will suffice.

The Custom level is another story altogether. To make use of the custom pull-down menus of the Custom level, *everything* must be defined for the various menus. Though the tutorial manual supplied with 4th Dimension jumps directly to the Custom level, Acius' tech-support recommends working in the User level — unless it's absolutely necessary to create a custom, stand-alone application.

Using 4th Dimension

First off, 4th Dimension is a huge, powerful, and complex program. The documentation supplied is over 1,000 pages thick, spanning five separate bound volumes. The Tutorial alone is over 200 pages.

Though 4th Dimension goes to great lengths to ease the creation of a database, it's important to remember that this is a *programming environment*. "Programming" is the key word: even with a simple database, programming Procedures must be created to describe what to do with the data.

To some extent, this process is automated. For example, when a link is established between files, the Procedure Editor will automatically create the programming lines describing the link. Working through the supplied Tutorial will give you an introduction to how the program operates, and will introduce you to some ways to set up a practical database.

But it's not enough. Once through the Tutorial, you're on your own. The Procedure Editor has been devised so that creating lines of instructions can be a simple "point-and-click" affair, scrolling between the lists of options in the three boxes. But the Procedure Editor can't tell you what to select, or when, or why, to select it. In reality, this feature offers little

more than typing assistance. Due to the complexity of 4th Dimension, there's no on-line "help" feature. And there couldn't be — any more than there could be a "help" feature for BASIC, Pascal, or Fortran.

After working with 4th Dimension for over six months, I have to confess that Acius does offer excellent tech support. Though it's not always possible to reach someone on the first try, Acius tech personnel make a monumental effort to call the user on the same day of the inquiry.

A visit to Acius revealed a sophisticated system of tracking requests for tech support; who called, when, the nature of the question, how to reach the customer, and how to best send requested literature. Of course, this tracking system is maintained on a network of Macintosh computers, via their own 4th Dimension application. (In fact, Acius will send a copy of this tracking system to any registered user, to take apart and examine the programming behind the system.) Also important is there's no time-limit on tech support: no dues, or special registration fees are required. Just pick up the phone and fire away. For members of CompuServe, the Acius tech-support staff logs-in several times every day to answer questions posted to their SIG (Acius' Special Interest Group).

Programmers comfortable with Pascal will feel right at home with 4th Dimension. For the rest of us, creating even simple database structures will involve hours of hair-tearing aggravation. Working with this database is a commitment to learning a computer programming language unique to 4th Dimension.

Speed, And Other Considerations

Effectively using 4th Dimension requires a hard-disk drive (so what doesn't these days?). The program itself consumes a full 714K on disk. Add the System, Finder, and a reasonable data-file, and you're beyond what a twin-floppy Mac can comfortably handle.

As for the hard-drive, speed is of the essence. Running Apple's serial-port version of the HD-20, versus an external SCSI drive, bogged program execution noticeably. Trying to run 4th Dimension

from a floppy-disk would slow things to a crawl.

The Macintosh II is best suited for working with 4th Dimension. Several Macintosh Plus and SE users have complained to Acius about the execution speed for various procedures. The official response? "Buy an accelerator board!" True to their word, all of the Macintosh SE stations at Acius' headquarters were equipped with the Radius Accelerator board.

On the subject of speed, any "comments" entered into the Procedure Editor take time to execute. The documentation provided for 4th Dimension heartily recommends that the lines of instructions in Procedures be preceded by comments, describing what happens in the procedure instruction. For absolute speed, delete the comments from your procedure, and create a separate text file to keep track of your comments.

Also at the Procedure level, if you're creating an external procedure with parameters (loaded into memory), the limit is 10 parameters for the current release. The documentation lists that up to 99 parameters are available — a bug to be addressed in the next release.

Working in the multi-user mode, the AppleTalk network is depressingly slow for database work. Even on a Macintosh II, 4th Dimension took time to recognize and update changes to the database. For serious multi-user applications, special EtherNet cards should be considered for each node of the system.

Also, for adding records in the multi-user mode, the Customizer (a separate program) must be used to tell 4th Dimension how many records might be required. This will likely change (be fixed) in future releases of 4th Dimension.

4th Dimension is offered in two versions: the complete program, and a special "Runtime" version. The Runtime program is used for executing Custom 4th Dimension applications, and denies the user access to any of the program's User or Structure levels. The Runtime version is available in groups of four for \$295 — about \$75 per node. Acius has elected to offer Runtime rather than individual site licensing for this program, a wise move in that a programmer can offer a client the finished version of a Custom application, all legal and above-board, with only a \$75 payment to Acius.

Acius also offers a "developer's package" for 4th Dimension, at the rate of \$695 per year. Included in this package is a 50% discount on all Acius software (soon to include a word-processor), a subscription to Acius Tech Notes, and special discount prices for attending Acius' Developers' Seminars and Training Sessions held throughout the country.

Last, but not least, is the buy-in price for acquiring a copy of 4th Dimension: \$695, making it one of the most expensive pieces of software available for the Macintosh. Considering the time required to create a database with this product, that price should be considered a down-payment. For a simple database, figure a couple of days to a week of dedicated work with the program. For more complex applications, database work that can *really* take advantage of 4th Dimension's power, the sky's the limit. This is *not* a product for the faint-of-heart, or for the casual user looking for a relational database. 4th Dimension is a programming language, written by a programmer, for programmers, and made to appeal to advanced programmers.

A reasonable analogy is offered by automobiles: you don't go to "driver education" at Indianapolis. If you need the speed and power, sure: that's the place to do your business. But getting there is an evolutionary process: a commitment to "learning to drive." If you pull 4th Dimension from the shelf as your first venture into a relational database, be prepared to strap on your helmet to bump shoulders with Mario Andretti.

(For further information, contact Acius, 20300 Stevens Creek Blvd., Ste. 495, Dept MT, Cupertino, CA 95014. 408/252-4444.) □

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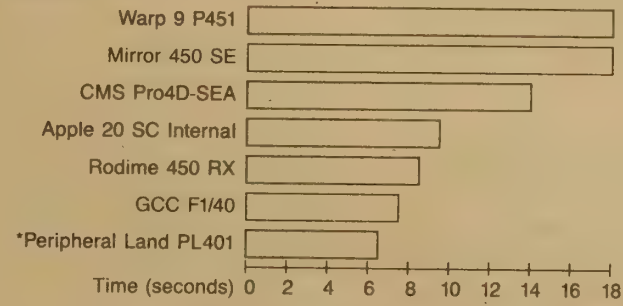
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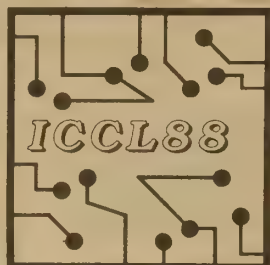
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Jan Lewis Announces HyperAge Magazine

Introducing The Age Of Hypermedia

Renowned industry analyst Jan Lewis, whose "But Jan Lewis Says..." column appears monthly in *MicroTimes*, announced her latest venture at this year's Macworld Expo in San Francisco: *HyperAge*, a magazine dedicated to exploring the possibilities of hypermedia.

Says Lewis: "The concept of hyper information spaces has been with us since 1945, when a scientist named Vannevar Bush developed a concept he called the memex and wrote a historic article about it. Not until Apple's seductive implementation of hypertext [*HyperCard*], however, did we have the promise of mass acceptance of these concepts."

Lewis feels strongly that the introduction of *HyperCard*, which is included with the purchase of every new Macintosh and makes the creation of personalized applications and personalized information bases accessible to non-programmers, will rapidly change the face of the computer industry and civilization itself. She says, "*HyperCard* represents one of the most significant new concepts to come upon the computer scene ever. No individual software product has ever, upon introduction, had greater potential for becoming a common thread around which millions of people will organize their computing life. We anticipate the emergence of a HyperCulture growing by as many as 100,000 new users each month for the foreseeable future. *HyperAge* was formed to help fuel this revolution, to promote its growth, and to chronicle its story as it unfolds."

In addition to news and reviews, *HyperAge* will feature an illustrious array of editorial contributors, including Ted Nelson, who created the hypermedia concept, and Danny Goodman, author of *HyperCard* stacks for Activision and of *The Complete HyperCard Handbook*. Upcoming stories include Howard Rheingold's annotation of Vannevar Bush's landmark 1945 article "As We May Think," Joe Hutsko describing how his team is applying *HyperCard* to John Sculley's office, John McMullen reviewing Lotus *Agenda*, Stu Roberson of Activision giving pointers to would-be stack developers, Jack Keen exploring the use of hypermedia in Corporate America, Amanda Goodenough's *Inigo* cartoon strip (from her *Inigo Gets Out* stack series), Marc Canter on bringing color to *HyperCard*, Tay Vaughn on stack design strategies, Apple's Tim Oren revealing his methods of developing multi-media stacks, Michael Mazour explaining how to use sounds and icons in *HyperCard*, and Jim Edlin discussing the Hyper-ing of Computerdom — as well as Lewis herself offering some *HyperCard* tricks and games from her stack "Confessions of a HyperCard Addict."

The premiere issue, which was unveiled and distributed at the Macworld Expo, is available by written request from HyperAge Communications, Inc., 108 E. Fremont Avenue, Sunnyvale, Calif, 94087. *HyperAge* will be published bimonthly; subscription price is \$24.95 per year; newsstand price for a single issue is \$3.95.

— Mary Eisenhart

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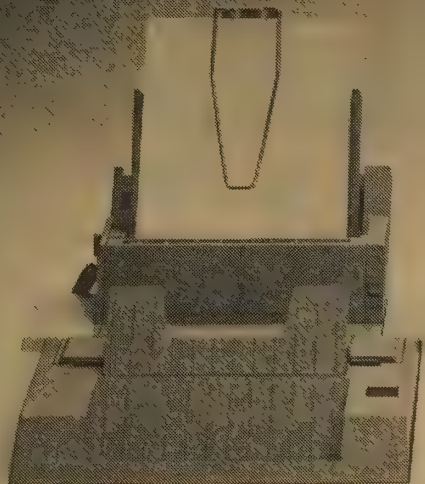
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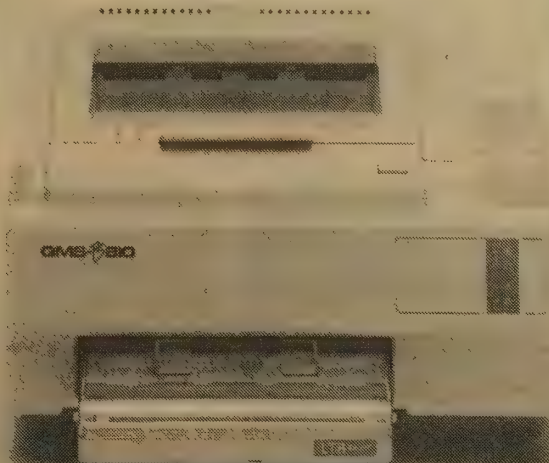
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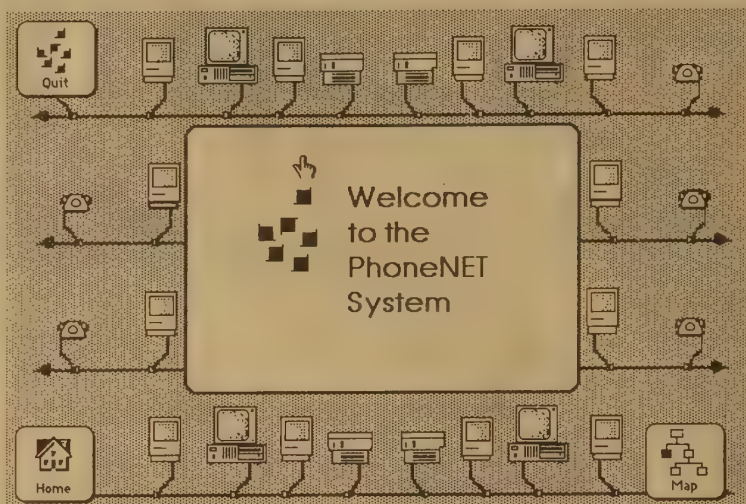
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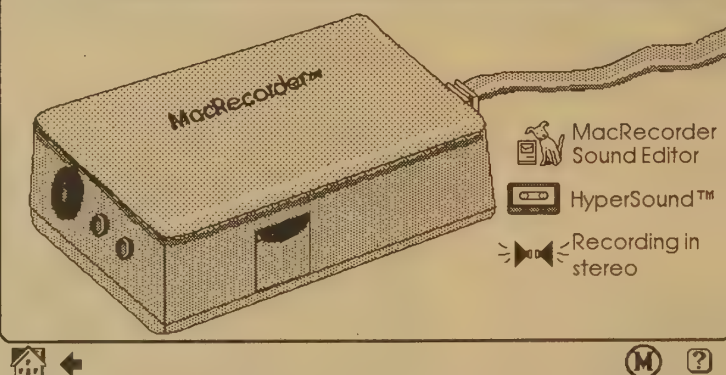
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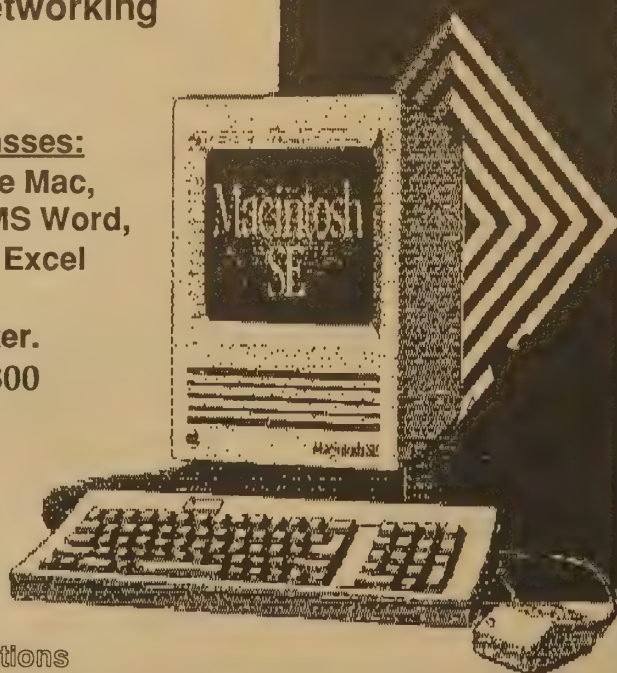
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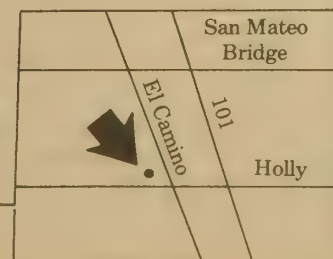
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Toshiba T1200	.2395
Sharp 4501	.659
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Transformed Reflex Plus Now Available From Borland

Borland has transformed its *Reflex* database into *Reflex Plus*, which combines a multi-file database with organizing, reporting and analyzing capabilities. *Reflex Plus* provides a powerful "GroupBY" function that groups records as you need them without demanding a complex syntax. *Reflex Plus* lets you build a relation simply by drawing lines between databases. It also provides WYSIWIG entry-form and report design. *Reflex Plus* allows any number of entry forms for the same database, sorting on as many files as you want, in the way you want and a database size that is limited only by the size of your hard disk. (\$279.) Borland International 4585, Scotts Valley Drive, Scotts Valley, CA 95066. (408) 438-8400.

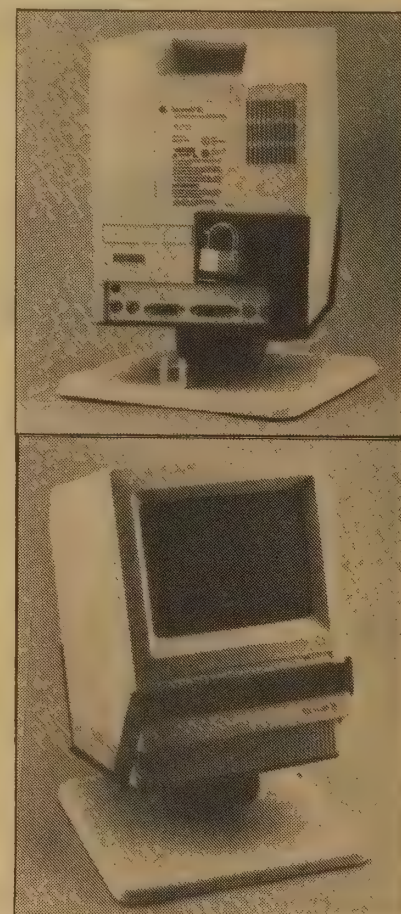
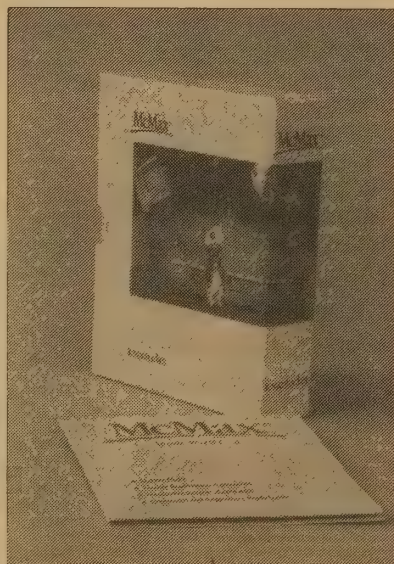


Manage Your Hard Disk With MacTREE

MacTREE from SRT provides a graphic "tree" that shows you exactly how your files and folders are stored on your hard disk. *MacTREE* lets you find and display any folder, file or group of files so that you can copy, move, delete or rename anything on your disk. You can sort your files in any way you like, by name, date, size and kind. *MacTREE* has a file filter system that will display only those files you want to see, wherever they are on the disk. You can also examine the entire structure of your hard disk. You can see disk statistics at any time you wish, along with discovering and eliminating duplicate and outdated files. (\$69.95) Software Research Technologies, Inc., 22901 Mill Creek Drive, Laguna Hills, CA 92653. (714) 472-0474.

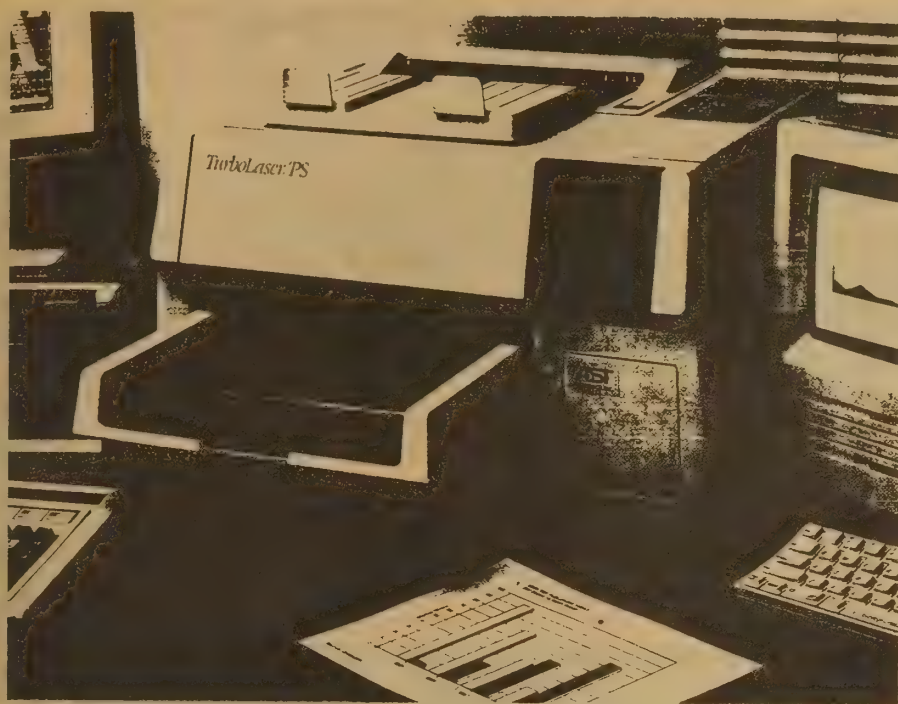
dBASE Compatible McMax Uses Same Files On PC And Mac

McMax from Nantucket is a relational database management system for the Mac. *McMax* is completely *dBASE* compatible, allowing the user to use the same program and data files on both the PC and the Mac without re-writing. Files may be transferred using serial connections and communications software. *McMax* also runs *dBASE* applications written for the PC up to ten times faster on the Macintosh. *McMax* takes advantage of the Macintosh interface to provide dialog boxes, scroll bars and pull down menus. It also provides an assist mode. A run time version is available which allows execution of business programs without having to purchase multiple copies of *McMax*. (\$295) Nantucket Corporation 12555 W. Jefferson Blvd., Suite 300, Los Angeles, CA 90066. (213) 390-7923.



Protect Your Mac SE With The "Muzzle"

The Muzzle is the nickname for the MacTilt SE Security System from Ergotron. It is a low tech solution to the high tech problem of data security. The black steel harness slides underneath the computer and across the front, covering the external drive. A steel security panel locks to a security pin in the rear of the SE blocking the power switch and receptacle. This prevents the SE from being powered up and the hard drive accessed. The MacTilt can also be cabled or permanently mounted to a work surface. The Muzzle comes with harness, bracket, security pin and lock. (\$129.95 with MacTilt SE, \$49.95 separately.) Ergotron, Inc., 621 East 79th Street, Minneapolis, MN 55420. (612) 854-9116.



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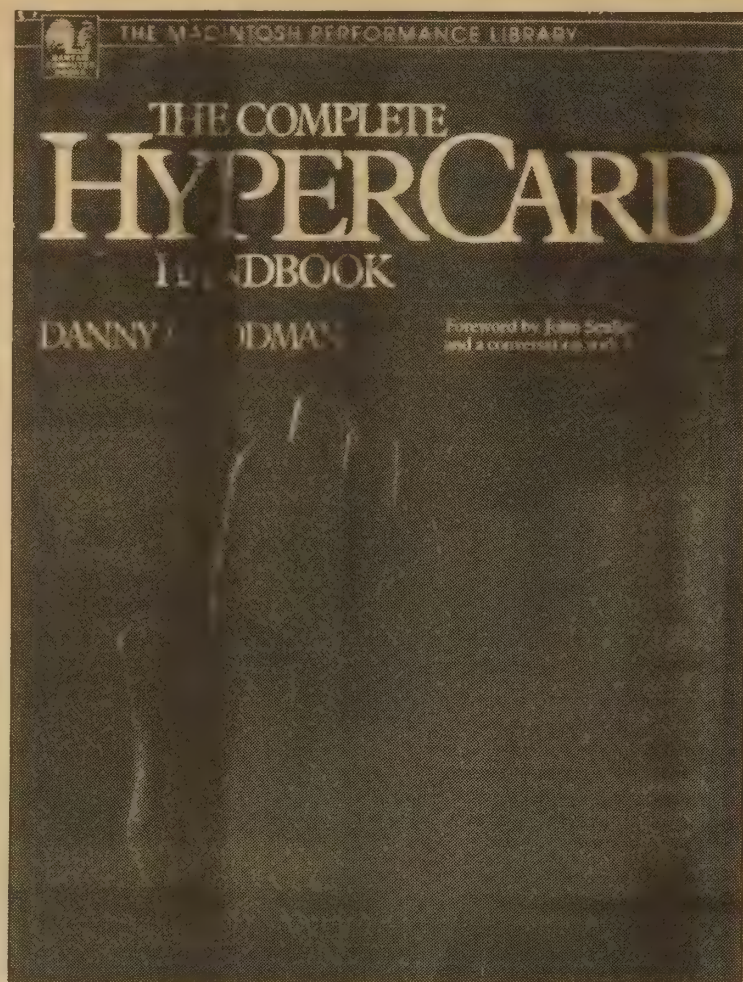
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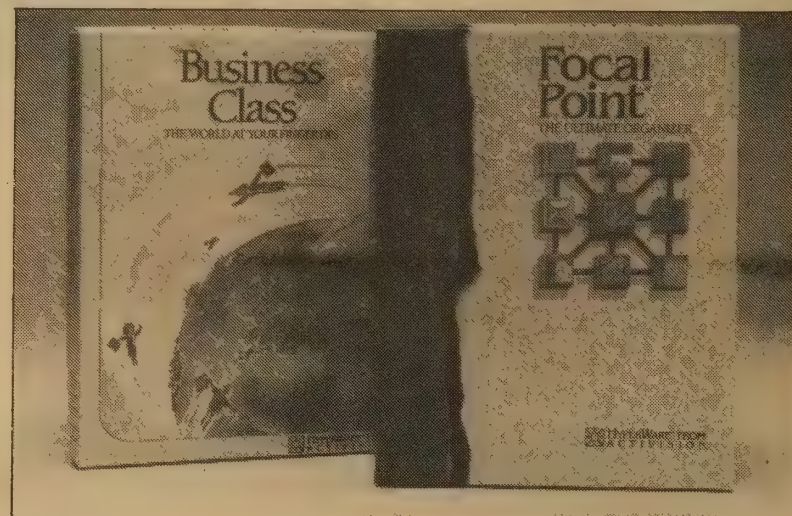
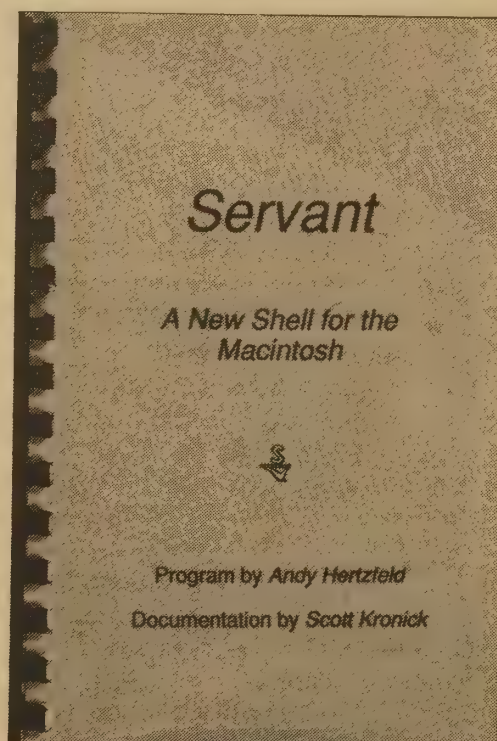


Danny Goodman's Guide To HyperCard

The *Complete HyperCard Handbook* written by Danny Goodman and published by Bantam Computer Books is a thorough guide and tutor to HyperCard. Danny Goodman provides the unique perspective of having seen HyperCard take shape in its secretive year and a half of development. The first half of the book tells of shortcuts and undocumented features of HyperCard. The second half delves into HyperCard's comprehensive programming level and the HyperTalk scripting language. The book will tell you, among many other things, how to create HyperCard stacks, backgrounds, cards, fields, and buttons. *The Complete HyperCard Handbook* contains over 600 pages of information. (\$29.95).

Documentation For Servant From Scott Kronick

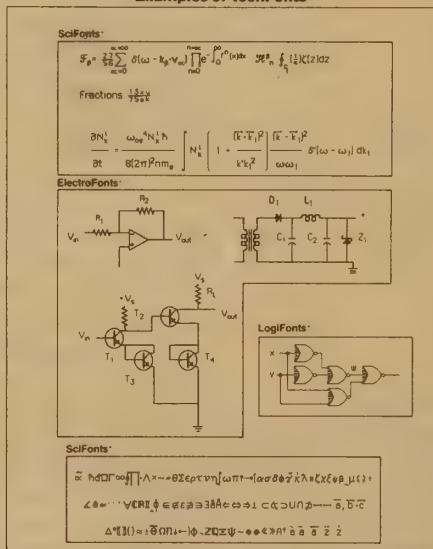
Servant is a shell for the Macintosh that replaces the Finder. *Servant* is available free on many BBSs and from user groups. Scott Kronick has published a book on how to use *Servant* called *Servant, A New Shell For The Macintosh*. The book shows the user how to use the new desktop, how to add special touches to the desktop, how to use the desktop and multiple applications at the same time, and how to explore and manipulate the resources of applications and system files. It also contains a list of *Servant* features indexed both graphically and by topic. (\$10.00) Servant Documentation, 1442A Walnut Street, Suite 278, Berkeley, CA 94709.



Two HyperCard Applications From Activision

Focal Point and *Business Class* are two HyperCard applications written by Danny Goodman and published by Activision under its HyperWare line. *Focal Point* (\$89.99) is designed to help the user manage personal business information, time, projects, clients, vendors, expenses and deadlines. Users can arrange the *Focal Point* stacks to suit their personal needs. It is especially designed to keep track of information that is easily forgotten. It is also designed to minimize time spent in redundant tasks by making it possible to never have to type the same information twice. *Business Class* (\$49.99) is for the world traveler who needs to have access to such information as who to call in Austria for a cab and what the exchange rate is in Turkey. This exhaustive stack covers such topics as passport information, customs, mail costs, hotel accommodations and what kind of plug you need for your electric hair dryer. Activision, 2350 Bayshore Parkway, Mountain View, CA 94043. (415) 960-0410.

Examples of TechFonts

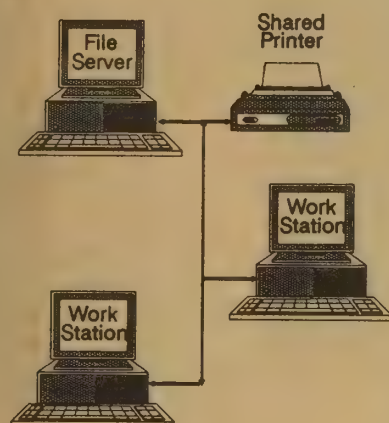


Three Technical Fonts For The Macintosh

SciFonts, *LogiFonts* and *ElectroFonts* from Paragon Concepts are three bit-mapped fonts that can be used by any program that allows a choice of fonts. They are designed to be printed with ImageWriter and LaserWriter printers. *SciFonts* is for scientific and math applications. *Logifonts* consists of a logic circuit font. *ElectroFonts* is a package that contains both *SciFonts* and *LogiFonts* as well as electric fonts with standard analog circuit symbols such as transistors, op-amps, switches, etc. *SciFonts* (\$50), *LogiFonts* (\$40) and *ElectroFonts* (\$99) are available from Paragon Concepts, 4954 Sun Valley Rd., Del Mar, CA 92014. (619) 481-1477.

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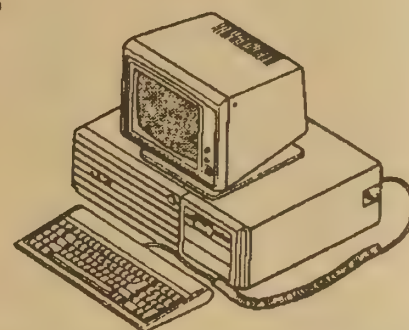


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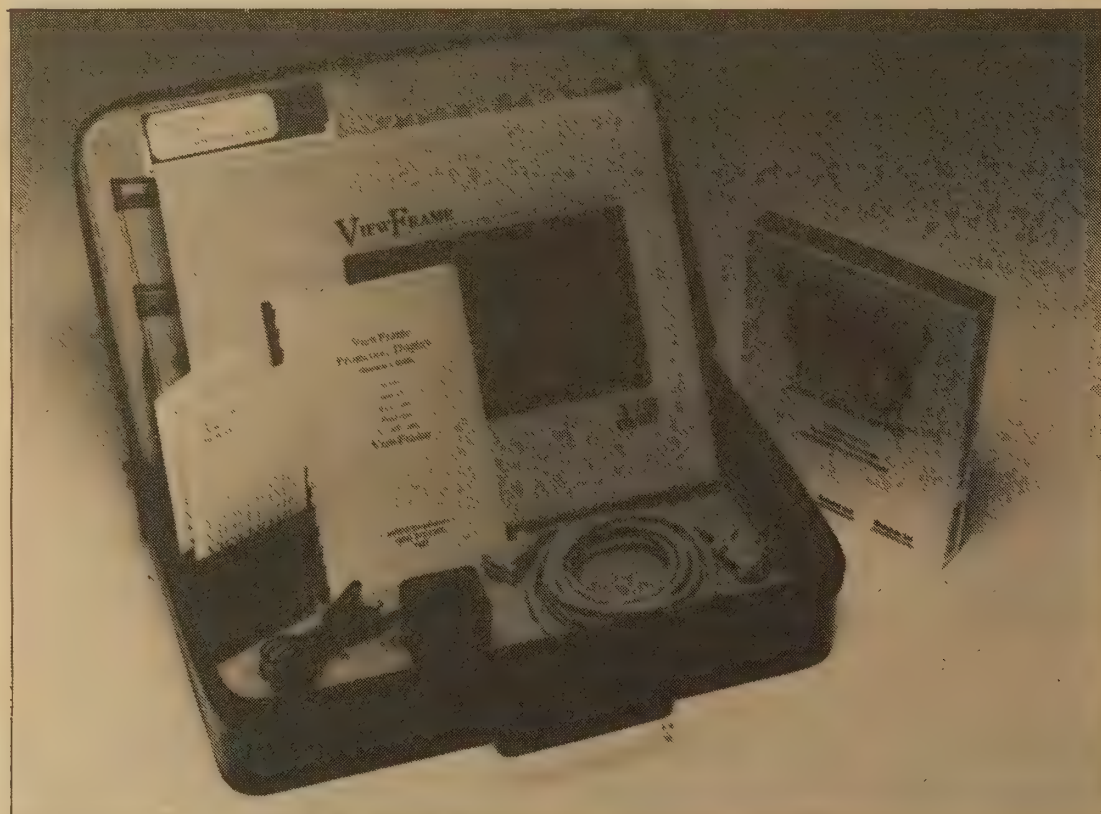
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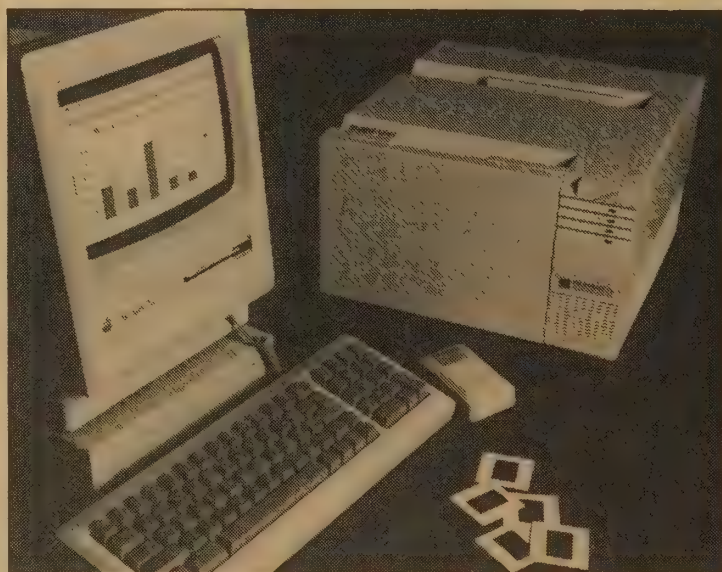


ViewFrame Projection Display Now Available For The Mac

MacViewFrame from nView lets you use an overhead projector to display your Macintosh screen to an audience. MacViewFrame is connected to the Mac through a small adapter which is installed inside the Mac. It is then placed on a conventional overhead projector to be used for presentations and training sessions. MacViewFrame provides 640 x 400 resolution, and, due to its design, can run continuously without degradation of image on hot, 650+ watt overheads. MacViewFrame comes with an attache carrying case, video adapter, interface cable and power supply. (\$1,695.) nView Corporation, 11835 Canon Blvd., Suite B-107, Newport News, VA 23606. (804) 873-1354.

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ImageMaker from Presentations Technologies is a desktop slide making device that lists under \$5,000. It offers the same 8,000 line resolution that professional slidemaking services offer. Users can produce a multi-slide presentation in a single day with the cost of each slide averaging around 50 cents. ImageMaker's resolution is not dependent on the resolution of your computer screen, as fully formed characters, symbols and shapes are located on an internal font cartridge. They are typeset on film when a beam of light is projected through a precise outline in the cartridge. In graphics mode, motors move a beam of light like a plotter moves a pen, making smooth lines, arcs, circles and polygons. (\$4,995) ImageMaker MacDriver also available. Presentation Technologies, 743 North Pastoria Ave., Sunnyvale, CA 94086. (408) 749-1959.



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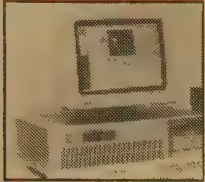
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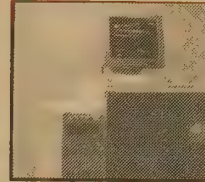


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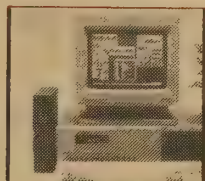
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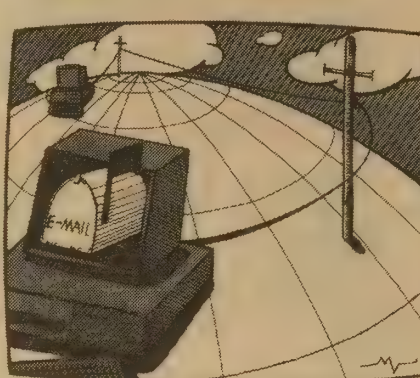
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INFO-XL:

The Life Organizer

By Birrell Walsh

There has been a lot of conversation about "Information Managers" since Lotus Corporation announced that Mitch Kapur, the inventor of Lotus 1-2-3, started work on Agenda. Information managers like Agenda are designed to prevent the user from floundering in a sea of free-form information. They have facilities for keeping track of time so the software can serve as a scheduler. They have ways of connecting the information in all sorts of patterns and are complex enough to be "Life Managers."

Lotus is still putting the finishing touches on Agenda, but its competition is already on the scene. Valor Software (a good name for a company that takes on Lotus) has fielded INFO-XL.

If you have to schedule or organize anything, you owe it to yourself to see INFO-XL. It won me over immediately — and I see a lot of software. Whereas most of it moves across the desk into a dusty archive, this product is already scheduling four careers in our house.

Five Points Of View

When you load INFO-XL, you find yourself confronted with five of INFO-XL's six windows. They provide different ways to collect and connect your information.

The first window is a "Manager" for the others. You use it to make an outline structure much like that in ThinkTank or Ready!. With this outliner you can set the broad pattern of your information.

The second window is for database records. "What?" you say. "I thought this was a freeform information handler." Well, it is and it isn't. The database records are like those in dBASE III or Paradox. They have character, number and date fields, with fixed lengths. They differ in that you can attach any kind of database record to any of the outline entries.

The use of the database is optional. However, in the first few minutes with INFO-XL I had designed three kinds of database records. One was for recording phone conversations, one for the name and address of people I know — with a field for

birthdays — and one for business contacts. INFO-XL allows you to attach any of them, or none, to an outline entry. You can add fields, move fields, or delete fields within these database records at any time.

Completely free-form is the third window, for comments. If you choose to use it, you can append up to 10,000 characters of commentary to an outline entry. You can write your letters, memos, diatribes, comments, notes on conversations, plans, recipes, and everything else. The comments window is a robust,

In other words, you can create your datebook as a by-product of your other planning in the outliner, and examine the entries any time you want.

The connection works the other way, too. If you are in the outliner window, the calendar will track with it as you move the cursor from item to item. If any item is date-stamped, moving the outliner's cursor to that item will bring up a calendar for the item's month and day. You will automatically be shown what else you have assigned to that time.

I see a lot of software. Whereas most of it moves across the desk into a dusty archive, INFO-XL is already scheduling four careers in our house.

if simple, word processor. It can also import ASCII and WordStar files, so you can append documents and letters you have written elsewhere to your INFO-XL records.

At the bottom of the screen are two more windows devoted entirely to managing your time. In the left hand corner is today's calendar. In the lower right hand corner is a monthly calendar. Both of them use INFO-XL's remarkable date-stamp system.

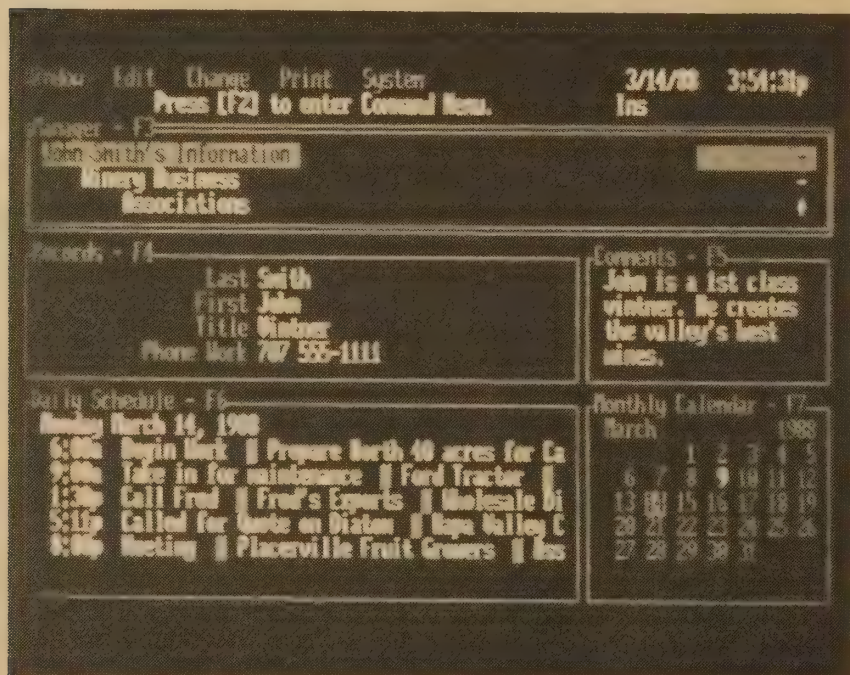
On any one of the outline entries you can hit Control-D, and another window appears with the current date and time. You can change this to any date, past or present. When you finish the editing, the date becomes associated with the entry.

Thereafter the entry will appear in the monthly and daily calendar on that date. The monthly calendar will show the date in highlighted video because it has an outline entry associated with it. The daily calendar for the day will show you all the activities for the day, sorted by time.

Connecting It All

INFO-XL's sixth window ties together all the others. When you press "F8," yet another window pops open. INFO-XL invites you to choose which of six words or phrases it will seek for you: it can seek for (A and B and C) or (D and E and F), where the letters stand for any word or phrase. You can tell the searcher to look in manager entries, database records, comments, or in any combination of them.

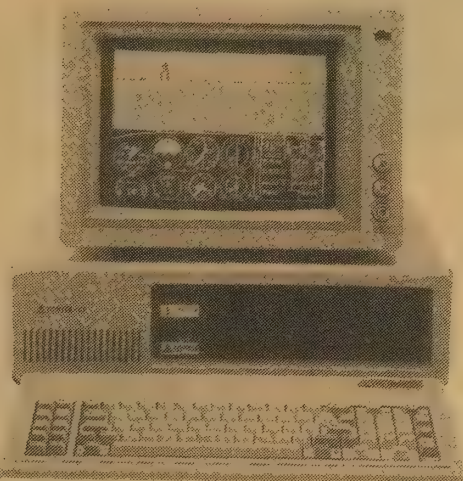
The searcher is fast and clean. Its window provides a list of all the entries, records and comments which contain the target words or phrases. You can see the records and comments that are associated with the "hits" as you move the search-window cursor through the answers. You can jump from the search window's list to the outline entry proper with one keystroke, to find the context in which you originally created the entry.



INFO-XL's default screen layout, showing five of its six windows.

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The search window shows not only the manager, or outline, entry. It also shows the category it belongs to, and the categories that they belong to. You get a whole genealogy for each hit.

If the tree-like structure of an outliner seems too limited, INFO-XL provides linking. It is like the "cloning" facility in ThinkTank. With this you can include any item under as many headings as you wish. These other entries are not copies — if you change one, they all change. They bring along their date & time stamps, their database-records, and their comments. This trick is achieved behind the scenes: INFO-XL uses internal pointers to direct attention to the appropriate entry. What you see is a doppelganger of the entry.

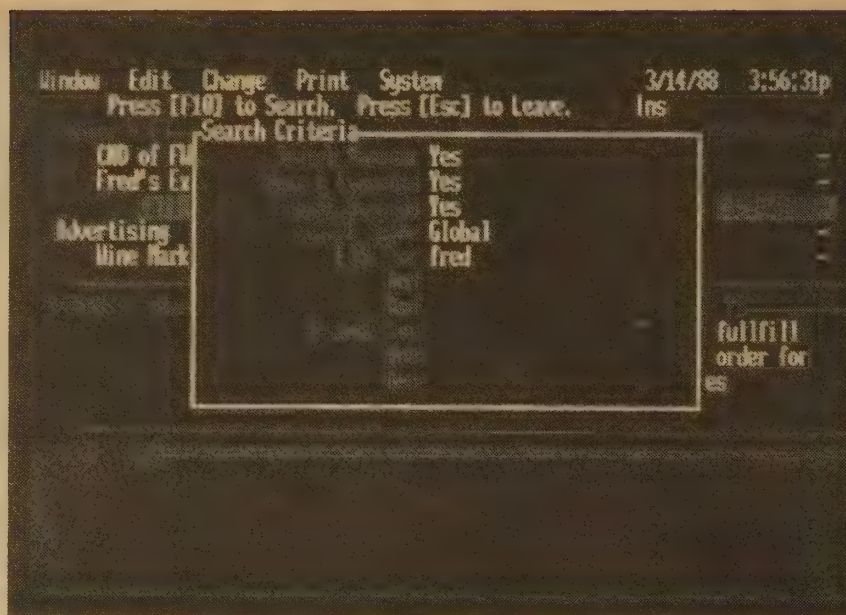
The linker allows you to list Alphonse Smith under business contacts, bowling buddies, and Italian cooks. A change to one entry will be a change to all of them. Deleting linked items does not harm the original entry. You can put together transient lists — for a project or a party — and then delete the list without losing the original records of which those temporary listings were composed.

...And Serving It Forth

As the manufacturer points out, INFO-XL does more than just "replicate paper." Each window of INFO-XL prints in a slightly different way. The manager prints much like a traditional outline processor with accessories. You can include any associated comments and records or exclude them if you choose. The date that you have associated with the entry will also be printed.

You can print out a calendar for any set of days you choose, with the items arranged by day and hour. You can choose to include all the items that happen during the time period selected, or only those which belong to one family of the outline. Unfortunately, the comments and records do not appear on the calendar print-out.

A comment window can be printed



Example of search criteria.

out as you would with any word processor, although font and emphasis options (underline, etc.) are not available. You do not need to leave INFO-XL to print out the memos, letters, and dissertations you may write within it. If you wish to enhance the document INFO-XL can export ASCII files from the comments window to any word-processor.

Database records can be printed out one at a time. You can also export them in a "comma-delimited ASCII file," which most databases can accept, and which works with most word-processing mailmerge features. You can keep your database records in INFO-XL for daily accessibility, and still use them with your conventional database software when that is more convenient.

The Uses Of A New Kind Of Tool

I quickly found how good INFO-XL is by using it to pre-organize a project involving 80 people and several million dollars.

I was able to include peoples' addresses and phone numbers in structured fields. At any time I can send this list off to Paradox for addition to a larger mailing list. It can be made

ready for mailmerge by a word processor in a few moments. Since it is still in INFO-XL, it is also available without leaving the project planner.

Multiple linking made it possible to include each person in several different projects in the outline and have all the information for each person under each heading. The comment fields allowed the notes, the memos, the conversation records,

outliner.

Not only is it easy to get data into INFO-XL, it's easy to get it out. The search facility lets you find items that are buried deep at the bottom of the outline structure, or retrieve the witty aside you made in a mislaid comment. If it's not a matter of content but of time, the two calendar views allow you two oversee a month or a day at a glance. The printing facilities allow you to extract what you have found with little pain.

INFO-XL is more than an information handler and it's not just an interesting database. The structure that Valor Software has chosen allows users to examine what is going on in their lives; and to keep track of it with some hope of success. You can make lists of resources and goals, and then use the linker to allot them to different projects. You no longer need to choose among an outline processor, a free-form word-processor, an orderly flat-file database and a time-manager.

INFO-XL has the features all of those different classes of software. You can keep a phonebook, an order-book, a datebook and a poetry notebook in the same file.

It is not just another "integrated" product, either. However beautifully an integrated product's applications

You no longer need to choose among an outline processor, a free-form word-processor, an orderly flat-file database and a time-manager. INFO-XL has the features all of those different classes of software.

and the draft agreements to be in the same file with the database. Each note about things to do could be date-stamped. As I did so, a schedule and a history were both automatically generated.

Within one day's use, I had created a plan seven layers deep and 32,000 bytes in size. INFO-XL makes it easy for a beginner to get this involved, this fast.

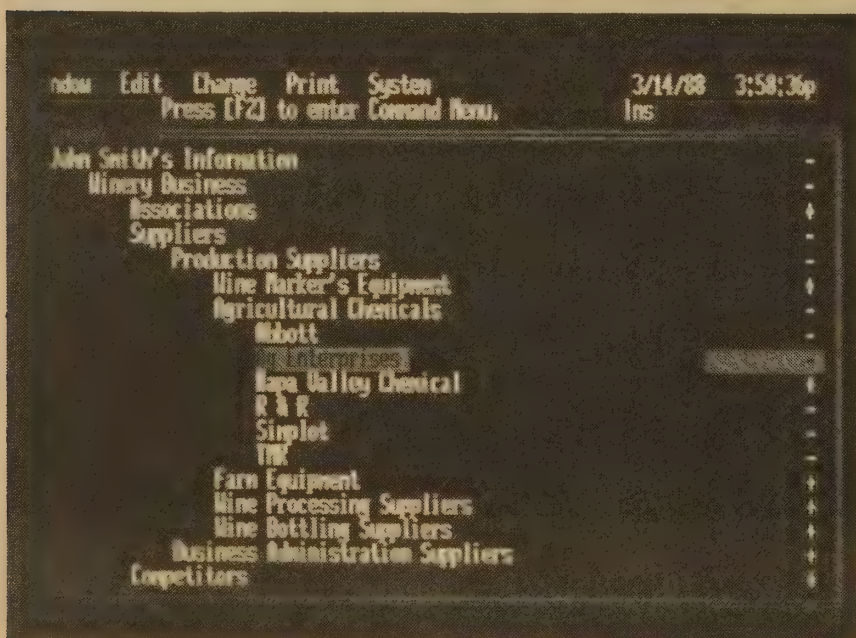
Anyone who has to keep track of a lot of people, things and events will want to consider this product, because it is designed with many different kinds of information in mind. You can store all the customers, clients, contacts, references and appointments in one "information base." Each can be stored in the format that fits it best. Your inventory may fit comfortably into standard data-base format, so that is what you use. Your conversations need free-form notes, so they are kept in the comments section. Scheduling a big job calls for "major projects" and the "component tasks," so you use the

may work together, they are separate applications which have separate files of entries. INFO-XL's "database" and "time manager" and "word processor" are integrated in every entry, without seams.

If you need more motivation to buy this remarkable software, consider this. Valor's update policy is that the purchasers of this edition will get the first update for free. The people at Valor seem to be eager for user feedback, so you have the possibility of getting a second edition that solves any problem you have with this first release at no additional cost. Since The Competition will be a Lotus product, you have to ask yourself — when did Lotus put out an update for free?

This is a flagship product and will be leading the fleet. If you have information to handle, don't miss it! (\$265.00.) Valor Software, 1700 Don Avenue, San Jose CA 95124, 408-978-3044. □

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Manager window zoomed to full size.

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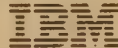
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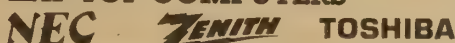


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The Laptop Office

By Ken Milburn

The ability to take your computer home or out of town has long been popular enough to have established Compaq as a major player in the PC-compatible wars. The "suitcase" portable succeeded because it nearly duplicated the functionality of a desktop machine. But smaller, lighter, handier "laptop" computers have been slow to open the public's pocketbooks. Until a year or so ago, there were some good reasons: Screens were nearly unreadable except in ideal lighting, batteries died just when the creative "light bulb" lit, and most laptops could do little more than act as "notebooks" for itinerant reporters (who bought fleets of Radio Shack's Model 100 at a time when they cost as much as some full-featured PC-compatible laptop machines cost today).

Despite the fact that fully-featured, PC-compatible laptops with legible displays are in plentiful array these days, they still aren't capturing

information available when you need it, and when you come across important information, you can input it while it's fresh and details are apparent. All of these things are just as true whether you're an architect, president of your company, on-site bookkeeper — yes, even a salesman or journalist.

Different Laptops For Different Folks

O.K. So let's assume that you've decided the price of freedom is worth it. Which laptop you buy depends on what you want to spend vs. how much you want the machine to do. Most of us will use them most of the time to do one or all of the following:

- Write: quick memos, follow-up letters, work on a speech, file a report.
- Keep track of your time and activities: Names and addresses of business contacts, To-Do lists, an appointment calendar.
- Use a spreadsheet to do some sort of financial planning.

All of these tasks are practical and easy for a machine with 640K and one 720KB, 3.5" floppy disk. Some all-in-one PC programs like *WordPerfect Executive* and *Microsoft Works* even combine all these capabilities (and more) onto one floppy. You can buy such a machine for right around \$1,000 from several vendors: DataVue (Spark), Sharp and Toshiba (1000), for instance.

If you don't want to give up the full version of *WordPerfect*, *Lotus 1-2-3* or some other familiar software title, you can add a second floppy drive or a RAM disk for a few hundred more.

If you think you're going to spend much time working under lousy lighting conditions (restaurants and airplanes are good examples), better plan on spending closer to \$2,000 for a dual floppy machine. Most of the units in that price range have backlit screens that you can read from almost any likely position — even if you're sitting in the dark.

Weight is another consideration. Because the DataVue Snap is modular, it's bigger and heavier than I'd like it to be — especially toting it down a crowded Tokyo sidewalk. If all you need is word processing, you can still get by with one of the "notebook" machines that do little else (e.g. Radio Shack's Model 200) — or you can simply take the back off the Snap, slide in a special option card and use the front half as a notebook. If you have to do more and can do without the Snap's versatility, want to be PC compatible and still feel that weight and size are primary criteria, take a look at Toshiba's inexpensive Model 1000. It has only one floppy disk, but you can load your programs into a RAM disk (an EMS card with 128K of user RAM and 640K of EMS is available for that purpose), then use the floppy for storing and transferring your files. That little gem weighs only 6.5 lbs (nearly half the Snap's weight) and is one of the least expensive models around.

To my mind, one of the least significant con-

siderations in buying a laptop is which processor chip it uses. For those of you who are (or need to be) speed freaks, there are some pricey models from Toshiba, Ogivar, Zenith and others that sport 80286 chips that are the same as those found in IBM/AT. The Toshiba and Zenith machines also have plasma screens that are better than any monochrome monitor you've seen on a desktop. Again, you'll have to plug them in or buy a (more weight) special battery pack.

Connecting With Your Desktop

Even if you invest in a portable printer, chances are the time will come when you'll want to print

Most users will find that the simplest software is usually most appropriate for use on a laptop. The real reason simple software succeeds best on these machines is that the people who use them are generally in a hurry.

your work on a letter-quality office printer that's too bulky to tote. You could plug the cable from the office printer to the back of your laptop. A better idea is to transfer the files to the (probably more fully-featured) software package on your desktop PC. Then you can use its capabilities to further edit and refine the content of what you've created. If you have a laser printer, you can even typeset and lay out your pages. It's also much easier, at that point, to incorporate information and graphics already resident on your office machine.

There are several ways to make your laptop communicate with your desktop PC. You can send files via modem (or null modem cable). If you're transmitting from a remote location, you'll need a modem and communications software on both machines. I recommend *ProComm* for the software because it's easy to use, flexible and (being Shareware) inexpensive. If you're using *WordPerfect Executive* or *Microsoft Works*, you won't need anything else. Those programs have built-in communications capabilities.

A closely related option is a "bridge" program like *The Brooklyn Bridge* or *The Flying Dutchman* (which lets you communicate even faster than through the traditional RS232 serial port by letting you use your "Centronics" printer port). These packages consist of some very easy-to-use file management and transfer software and

Why should we pay nearly twice the price for something one quarter the size of an equivalent desk-bound computer? Freedom. When you want to get away from ringing phones and interminable interruptions in the office, you can take all your work with you.

a major chunk of PC dollars. I suspect a couple of reasons: A) They still look like toy typewriters and B) their real benefits aren't obvious. It's hard for most of us to imagine why we should pay nearly twice the price for something one quarter the size of an equivalent desk-bound computer. Prices for "briefcase" portables are falling, but not as fast as those for PC-clones.

Freedom is what you get for the extra bucks. Any time you want to get away from ringing phones and interminable interruptions in the office, you can take all your work with you. If you feel trapped writing a program or report at home, you can go sit on a mountaintop and get your work done. You can have your important infor-

Copyright © 1988 by Ken Milburn. All rights reserved. Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including PCWorld, InfoWorld, Computer Graphics World and MicroTimes. He also does system configuration for small businesses. He can be reached at (415) 331-6926 or by sending E-mail to (ken) on the WELL, (415) 332-6106.

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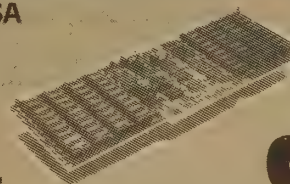
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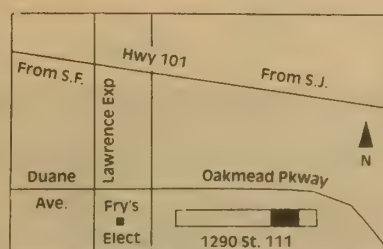
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a null-modem cable. You need only one package for both laptop and PC, and transfer is almost as fast as if you were transferring files between one disk and another on the same machine. Of course, both machines have to be in the same location when the transfer is made, so bridge programs are seldom a substitute for modem transfer.

The easiest way of all to transfer files back and forth, and one of the least expensive, is to install a 3.5" disk drive in the desktop machine. You can buy complete kits for between \$120 and \$200, and installation takes less than half an hour. Then all you need do is use the disks in whichever machine you want to be working on. All that's involved in making copies and transfers are the DOS commands you're already familiar with.

Most users will find that the simplest software is usually most appropriate for use on a laptop. That's not because of weaknesses in the performance of the machine, although the lighter weight and lower price of floppy-based units makes them more appealing. On those machines, software that can be stored on a single floppy requires less (confusing and annoying) disk-swapping. The real reason simple software succeeds best on these machines is that the people who use them are generally in a hurry. They want to get the information down as quickly as possible, and in a form that can be used later by people in the office.

Keeping that in mind, there are several packages that I've found to be extremely useful, besides the already mentioned WP Executive and Works. One of them is ACT, a very versatile and clever bit of personal contact and time management software. Far more sophisticated than the

"address books" contained in most desk-accessory and all-in-one programs, ACT is good enough to keep track of almost everything connected with sales and contacts. You can automatically generate letters, make phone calls automatically and even fill in the blanks in a new contact form automatically. The beauty of having this program on a laptop is that the information you need is there when you need it — no matter where that may be.

If you're an engineering type, you may want to get hold of a copy of AutoSketch (\$79.95), GenericCADD 3.0 (\$99.50) or FirstCADD (\$49.95). Unlike most other precision drafting programs, these all sell for peanuts and fit on a single disk. They don't have every bell and whistle contained in the \$2,995 version of AutoCAD, but they're plenty good for making measurements and drawing notes in the field, then converting them to AutoCAD .DXF files, which can be understood by most any PC-based pro-level CAD package. Any of these programs can be used without a pointing device. Or you could attach a Logitech C7 Plus to the serial port on your laptop, since it is easy to interface and needs no plug-in power or expansion bus slot.

Why Your Laptop Probably Won't Be Your Only Computer

This entire column was written on a DataVue Snap, mostly in clients' offices or neighborhood coffee shops. None of it was written in my computer lab. Because I was out of prison, it took about half as long to write as I usually spend on articles of the same length.

I'm not about to sell my Mac or my ATs though. For one thing, I review and work on a lot of

graphics programs. Most laptops are limited to the primitive CGA graphics born with the original PC. And most of their screens are "squished" from top to bottom, making text look little better than it would on a regular aspect (4:3) monitor (because the scan lines are pushed closer together in the process), but making circles look like eggs when you draw or paint them. There are some exceptions. Kaypro, Zenith and Ogivar announced built-in EGA displays this fall — good enough for "on-the-fly" business graphics, CADD and desktop publishing. The Zenith and Ogivar screens are even the right shape. Still, you'd be hard-put to attach a large screen, specialized card or digitizing pad to a laptop. Most of them have no expansion slots and only one each serial and parallel port.

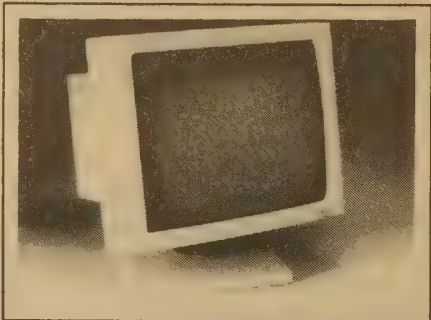
If you're going to work with an accounting package, do sales order entry or keep a large database on-line, you'll need a unit with a built-in hard disk. That's either going to severely limit battery life or restrict you to a computing location with a wall plug. Furthermore, the machine's going to cost you \$3-5K. There are several machines available with hard disks, now mostly in the 20MB range. The Snap I'm using turns out to be the right choice when you need freedom from a wall plug at some times, a hard disk at others. Its computing module unsnaps from the back of the case and can be either a plug-in 20MB hard-disk unit or one with a four-hour battery and dual floppies.

Aside from the slight differences in capabilities, there's another reason why some people won't want to substitute a laptop for a desktop PC: Other people in the office may need access to the information that's slung over your shoulder as you board the plane to Cleveland. □

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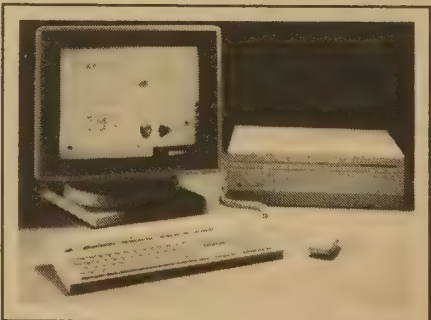


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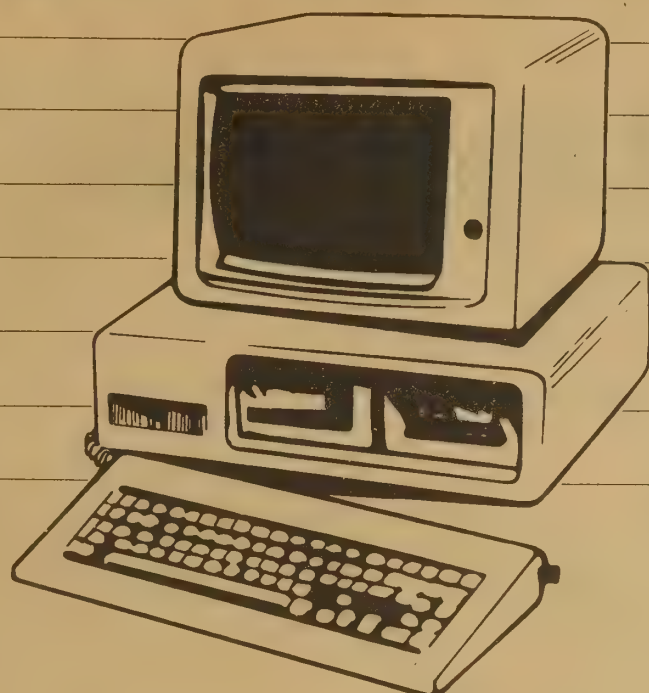
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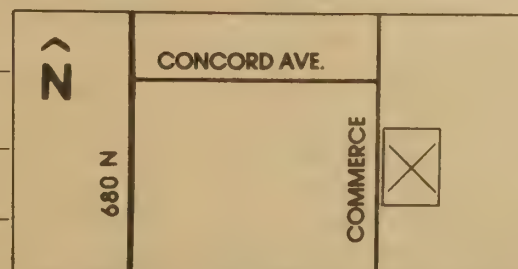
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The Raw And The Cooked

By Bennett Falk

Dear Baba Ioctl: What does "Segmentation violation — Core dumped" mean? tation violation — Core dumped" mean?

I was working with a new form-driven data entry program the other day and suddenly, after a sequence of keystrokes I don't remember, the screen went blank and gave me that error message.

The next thing I did was press RETURN, and absolutely nothing happened! The cursor stayed in place blinking at me, it didn't go to the next line, and I didn't get another shell prompt. I thought I'd crashed the computer, but the system administrator just laughed at me when I asked about that.

Someone at a desk near mine said I had "frozen" my terminal (whatever that means), and the only thing I could do was log in somewhere else and kill all the processes running on my terminal. They said this would have the same effect as logging out, and then I could log back in and everything would be normal.

Well, I took their advice, but what a pain!

First I had to find a free terminal and log in. Then I had to give a command ("tty") to find out what port that terminal was attached to. Next I had to get the port number for the terminal that was frozen (I used "who" to do this), and then I had to get process ID numbers for all the processes running on that terminal with "ps -t" and

"Segmentation violation — Core dumped" is an ominous-sounding but all-purpose UNIX error message that simply means the program you were running has a bug in it.

the tty number for the frozen terminal. The first time I tried this it didn't work because I put a space between the "-t" and the port number, so I had to retype the whole thing. Fortunately, there was only one process. I used "kill -9" with the process ID number (only now, of course, there had to be a space separating the "-9" from the process ID) and that was finally that.

When I returned to my terminal, I had a login prompt. I logged in, and sure enough, everything was normal.

Later in the day, I had another "Segmentation violation," and had to go through the whole thing again. I hate to complain, but this is really a

hassle. Isn't there an easier way to deal with this stuff, whatever it is?

**Yours,
Disgruntled in Del Mar**

Baba Ioctl replies:

Dear Disgruntled: you have, in reality, asked Baba two questions, which, in the spirit of unanimity, he will answer for the price of one.

Answer Number 1: "Segmentation violation — Core dumped" is an ominous-sounding but all-purpose UNIX error message that simply means the program you were running has a bug in it. Most likely this bug has to do with one portion of the program gleefully writing over some heretofore sacred space in memory.

When, elsewhere in the program, it is discovered that the sacred memory space contains only gibberish, the program does the honorable thing and dies, leaving behind a file named "core" which is an image of memory at the time the problem was encountered. When a program, as we say, "dumps core," control is returned to that program's parent process. Usually, this parent process is an interactive shell program of some kind.

Unless you are the author of the program producing the core dump, you need concern yourself no further with the segmentation violation and its causes. The bug, indeed, is the least of your worries. You may, with impunity, remove the file named "core" in the interest of conserving disk space.

Answer Number 2: You, Disgruntled, have already made excellent progress in the quest for Enlightenment; you have learned that the core dump did not crash the system, and you described quite accurately one way of recovering from its effects. You still, however, languish in frustration because you have not yet learned to see that the "frozen terminal" is but an illusion.

How can it be that a frozen terminal is an illusion? Think for a moment about how UNIX exchanges information with any device. The UNIX kernel contains "device drivers" that translate information into and out of the format that each device requires. Most of the device drivers control mechanical things, such as disk drives or tape drives, which read and write at very high speeds without error. These device drivers are hardware specific, that is, the drivers are written for a specific make of disk drive or disk controller, and if a different brand of drive is installed, it requires a different device driver.

The terminal drivers in the UNIX kernel are device drivers of a special kind. These drivers are not hardware specific: they can read and write to any of the hundreds of different brands of terminal on the market. In addition terminal drivers impose a "human readable" format on the computer's output: they discern, among all the characters read from the error-prone typ-

ist's keyboard, which are genuine and which are erasures.

To do this, the terminal driver uses a "line discipline" which processes everything coming from or going to a terminal. The line discipline does many things. It organizes input into lines, it echoes characters to the terminal, it expands tabs to spaces on output, and it interprets the user-defined "erase," "kill," and "interrupt" characters. The erase character is like a destructive backspace, the kill character throws away

"Cooked mode" is used by the UNIX shells and most of the built-in UNIX utilities. In this mode, terminal input is read a line at a time; in order to send anything to an application using cooked mode, the user must enter the expected input and press return.

the current line and allows the typist to start over, and the interrupt key stops current command execution. The line discipline can process other kinds of signals as well, sensing when the terminal's power switch is turned off or when the phone connection is interrupted on a dial-up line.

As you might expect, the line discipline can be configured for many different combinations of features. However, most terminal drivers use the line discipline to drive terminals in one of two modes: "raw" mode and "cooked" or "canonical" mode.

"Cooked mode" is used by the UNIX shells and most of the built-in UNIX utilities. In this mode, terminal input is read a line at a time: in order to send anything to an application using cooked mode, the user must enter the expected input and press return. In addition, cooked mode allows the user to edit input (using the erase and kill characters mentioned above) while it is still under the control of the line discipline and before it is presented to the controlling program. Above all, in cooked mode, the RETURN key (which sends Control-M) on your keyboard is mapped to NEWLINE (or Control-J). By convention UNIX uses Control-J as the end of line character.

Cooked mode is fine for programs that are

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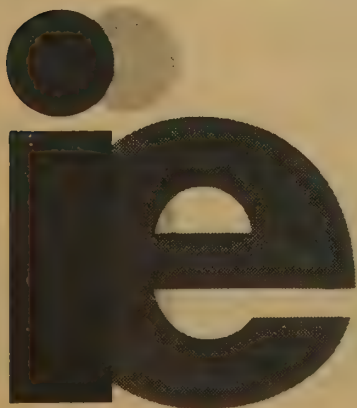
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"line-oriented" and have a wordy user interface. Because input is buffered in lines, cooked mode is less of a burden on the computer's processor, and using cooked mode, the programmer has no need to build extra commands into an application for editing the user's input. In canonical mode, the line discipline, which is not part of the application at all, provides this ability. Consequently the programmer has less to do and the application itself is less bulky. UNIX programs like the shell, "ed," and "mail" use canonical mode to good effect.

Of course, there are things for which cooked mode is not suited. Imagine how difficult full-screen editing would be in cooked mode. Consequently, the UNIX terminal drivers support a "raw mode" for use by screen-oriented programs (editors such as the beloved "vi" and probably by your "form driven" data entry program). In raw mode, terminal input is read a character at a time, and of course, this means the terminal driver does not interpret special characters such as erase or kill or even RETURN. Raw mode also turns off automatic echoing of keystrokes. Consequently, applications using raw mode must take complete control of editing input and displaying characters on the screen.

UNIX allows users to select exactly what mode the line discipline will use. Programmers make this selection with the "I/O Control" system call whose name is the same as mine, "ioctl." With the "ioctl" system call, the programmer can build an application that, when run, puts the user's terminal in raw mode and restores the original line discipline when the application exits.

There isn't much a user can do about terminal driver settings inside an application program, but as you will see below, even non-programmers

Imagine how difficult full-screen editing would be in cooked mode. Consequently, the UNIX terminal drivers support a "raw mode" for use by screen-oriented programs (editors such as the beloved "vi" and probably by "form driven" data entry programs).

can use the UNIX "stty" command to set the characteristics of the terminal driver for the current program.

At last, O Disgruntled One, the illusion of the frozen terminal can be unmasked.

The form-driven program you were running almost certainly put your terminal into raw mode. When that program exits normally, it restores the line discipline of your terminal to its previous state. However, when the program encountered a segmentation violation, it could not continue and abruptly quit without restoring the original state of the line discipline. Your terminal was left in raw mode even though control was returned to the shell for which cooked mode is customarily used.

If line discipline were built into the shell, your

terminal would indeed be frozen at this point. There would be no way to communicate with the shell from a terminal in raw mode.

However, because line discipline is part of the kernel's terminal driver and not part of the shell itself, you can still issue commands to the shell even when your terminal is in raw mode. You need only be aware that the services cooked mode provides (particularly character echo and the mapping of RETURN to NEWLINE) are not available. (The absence of these services created the appearance that nothing happened when you pressed RETURN after the segmentation violation.)

To issue commands to the shell when your terminal has been left in raw mode, simply type the customary command and, instead of ending the command with RETURN, type control-j (^J) instead. (Control characters are not case sensitive, it will make no difference whether you hold the shift key down or not.)

Usually the first command you will want to give in such a situation is the command to reset the line discipline for your terminal to "cooked" mode:

stty cooked

There are several variations on this command. Most systems will recognize "stty sane." Some systems have a "reset" command for this purpose as well. If all else fails, however, the command "stty -nl echo" should restore order.

These and many other mysteries are discussed in the "stty" entry in the UNIX Programmers Manual. As with any sacred text, this manual entry will clarify some things and obscure others, but Baba has already answered two questions for the price of one, so read the manual first, please, and then submit your questions afterward. □

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Ten Steps To Telecomm Success

By Brock N. Meeks

Try to teach someone the wonders of online communications and what happens? You're likely to find yourself in a sadistic, sprawling headlong plunge down memory lane. The script is the same, only the names have been changed to protect the innocent.

Watching a friend struggle with baud rates, parity, stop bits, and a hideous device known only by the cryptic code name RS-232, is, as Yogi Berra once said, "Like deja vu all over again."

For all your future telecommunicating friends, and for all those that happened to find a modem in their Christmas stocking, here are Ten Steps To Telecommunications Success.

Do Your Homework

Learn most of what you need to know before you attempt to log on. Learn the jargon. Speak the lingo. Converse with the "natives." Once you're familiar with the language, you'll feel more confident. Ask anyone that's spent a mod-

**Watching a friend struggle with
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icum of time online and they'll confirm: there is an intimidating world waiting beyond that green screen.

Doing your homework also extends to knowing how your communications program works. I know, there are precious few manuals that remotely approach a readable level; but time spent learning your communications program's functions should be thought of more as an investment than recreation. (Besides, you'll get plenty of recreation once you've logged on and start reading those crazy comments left by someone named Zaphod Bettlebox from Des Moines.)

Brock Meeks is a San Diego-based freelance writer. His well-worn online mentor is Ryan Gale.

Your Style

Develop your own style. The beauty of the online medium is that you can be anything you want to be. You can be a flaming liberal, a staunch conservative, or just a "fun guy" out for a midnight lark. More often than not, however, your online persona is an extension of the "real" you. Research shows that people are tremendously more candid online.

When developing your own style, it's easiest to just be "natural." Remember, however, that people are getting to know you solely by reading your online comments. For example, playing the devil's advocate is a worthy niche, but it can draw some ungodly fire from other users. If you can handle the heat, so be it. It is just this sort of variety that makes the online community one of the most interesting places to "be."

Zen And The Art Of Online Communications

Get a handle on your emotional state of being. I call this "Zen and the Art of Online Communications." Yes, it sounds a bit quirky, but it works. If you go online like some kind of emotional basket case, you're likely to log on the next day and wonder what could have ever possessed you to enter yesterday's off-the-wall comments.

Much to my chagrin, I find that my online moronic comments are easily traced back to some dour mood. And take it from one who knows: humble pie leaves a taste in your mouth that isn't easily forgotten. The online world is difficult enough to navigate without making the entire ethernet your personal battleground.

Of course, there are going to be those times when you just can't help but bring such emotions online. In that case, at least, have the hindsight to recognize what you've done and make amends. Apologize, grovel, whatever, but get the situation resolved. Developing that attitude may be the single most important key to your online longevity.

Weakness

Weaknesses. Know yours. Accept things about yourself that you don't do well and transfer those insights to your online "life."

Maybe you don't handle confrontations well. Online it's easy to confront someone because you don't have to involve yourself in a face-to-face discussion. But if you're not adept at such con-

**Sure, you can dial into your
local labyrinth of bulletin
boards until smoke starts to
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land of "pay for play."**

versations off line, don't suddenly decide you can handle such dialogues online.

It'd be easy to fire those first salvos across the ethernet, but people fire back. I've seen too many people fade from the bitstream because they couldn't handle a fierce online discussion.

Join in the types of discussions where you feel most comfortable. These may be technical, or in some kind of roundtable where you can share your expertise. Get involved in the types of discussions you enjoy or you're guaranteeing your failure. And who needs another statistic?

Strengths

The flip side of the above. Know what you're good at, what you enjoy the most, what it is that you have to offer someone else. Get a handle on your strengths and you'll flourish online.

When I first went online some seven years ago I was hammered on by other online participants because I was always looking at each side of a discussion. I was labeled "wishy-washy." Some wag suggested I use the handle "Charlie Brown." I copped to the "failing" claiming my journalistic background: "Journalists aren't paid for their opinions," I fired back, secretly harboring my own worries. "Are they right?" I agonized.

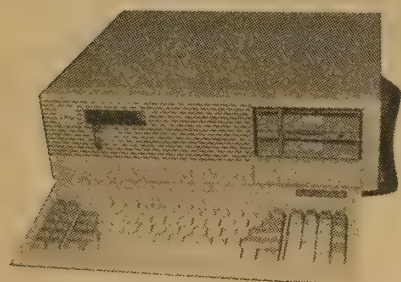
Here I am, several years later, and I've come to see that this aspect of my online style is a strength. It makes me a better participant. I often use this strength to revive an important discussion that I fear is ebbing into apathy.

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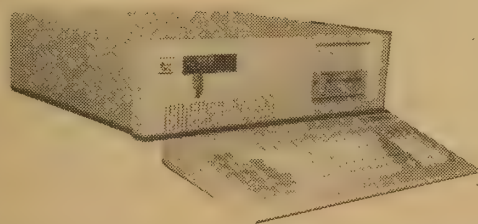


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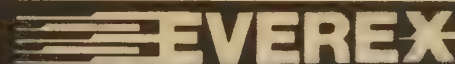
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Know Your Budget

Checkbook burnout. This is a malady peculiar to the information age. It comes with the overzealousness of discovering a "bright new world"; a "global village." It isn't free, folks.

Sure, you can dial into your local labyrinth of bulletin boards until smoke starts to rise from your Hayes compatible modem; but sooner or later, you discover that the real advantage of on-line communications lies "out there" in the land of "pay for play." In other words, to reach out and telecommunicate, it's going to cost you some coin.

There is nothing quite as horrendous as that first three-figure bill for accessing the WELL or CompuServe. And nothing can kill your desire for "going online" faster than a smoking hole in your rent money.

One solution, among others, is writing responses off line. This immediately does two things for you. First, it saves you connect time. Second, it gives you a chance to reflect and say what you really want, instead of what you feel, a situation that you may end up regretting.

Your Mentor

Find an online mentor. This is a person that you can go to when you have a question or a problem. Maybe it will be that first person to take pity on your poor, fumbling, online soul, or the person that quietly took you aside in e-mail and explained some of the finer points of this medium.

Send that person Christmas presents, cards on their birthday, whatever. Don't let them go. They will, undoubtedly, be your pathway to improving your online skills.

Using the modem as a procrastination tool eventually catches up with you. If you find yourself logging on when you really should be studying, getting that report done for your boss, or doing your taxes, it's time to reconsider.

Shut Up

Learn to keep your mouth, or cursor, as the case may be, shut. Nothing has torpedoed a new modem owner faster than a loose tongue, or a tongue that doesn't know when to keep quiet and "listen." If you are prone to entering comments rivaling the word count of *War And Peace* you'll find your words summarily passed over and rarely replied to.

And if you become known as someone who can't be trusted with privileged information, you're over before you get in the game. The issue of online privacy is tenuous enough as it is; violate that privacy — in any way — and you'll be a long time regaining any respect.

Allocate Your Time

Using the modem as a procrastination tool eventually catches up with you. If you find yourself

logging on when you really should be studying, getting that report done for your boss, or doing your taxes, it's time to reconsider.

Ah, you're nodding your head. You know what I'm talking about. The "online addict." We all joke about it, and say, "It'll never happen to me." But it can, and will, if you're not careful.

Stories abound of people staying up till the wee hours of the morning, charging through one system after another, only to find themselves dragging into work the next morning with an "online hangover." More dangerous are those that find they cannot function without their "online fix" each day.

Newcomers reading this will not believe me. Ask around. The veterans will tell you. It's scary. Some people live their life online, and the "real world" becomes an ancillary reality.

Last, But Not Least

Humor. Don't take yourself, or what's being said online so seriously that you cannot find a spot for humor. We're not taking Superpower Summit Conference level discussions here.

Through all the frustrations and setbacks you'll ultimately experience online, smile. Sound like tripe? Maybe. But I've found that those with an attitude of humor are the most lively and "well-rounded" online personalities.

You don't have to be Bill Cosby or Stephen Wright to keep humor in your online traveling bag. Just take things at face value and learn to see the humor in each and every thing that happens. For better or worse, the ability to laugh at yourself, and the circumstances surrounding your telecommunications, will ensure your success. □

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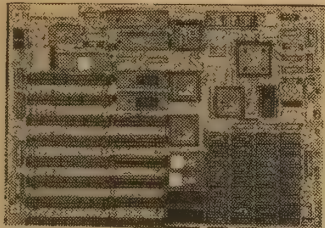
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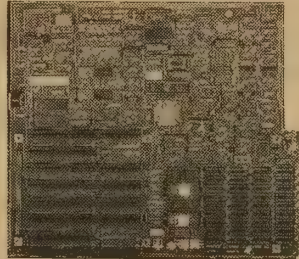
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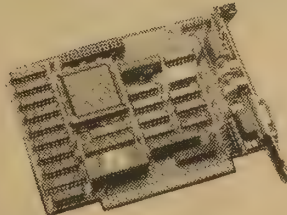
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California Lawmakers Meet The Electronic Age

By Mary Eisenhart

Finding your lawmakers less than clairvoyant these days?

Like many Americans, you may well have settled into a certain apathy about communicating with your legislators. You may well think that your voice will never be heard among the chorus of conflicting interests, that individual concerns were made to be ignored.

You might, then, be rather surprised to hear Bob Jacobson, a consultant to the California Assembly Utilities and Commerce Committee working in the office of UCC chairwoman Gwen Moore. After six years in Sacramento, Jacobson is inclined to characterize the capital as an "ivory-walled prison."

"Many members [of the legislature]," says Jacobson, "would prefer to be less dependent on the prepackaged information they get in the capitol from people who are most accessible to them — who are, in fact, lobbyists, or consultants. They would like to know what the public knows or would like to know or would like them to do, and if they had that kind of assurance they would be much braver themselves in taking positions which might contravene the wishes of the people who are around them all day."

"To the extent that we can identify an audience or a constituency and be directly responsible to them, and, conversely, have them directly tell us what they're thinking, what they feel — it liberates the legislators, because suddenly they have communication with the people out there."

Jacobson and Assemblywoman Moore (49th District) are among those most involved in bringing California law and the lawmaking process up to date in dealing with electronic communication and other forms of computer-based technologies. Moore is the sponsor of ACA 36 (see sidebar), which would extend the privacy protections of the California Constitution to computer-based information. It evolved in response to the occasional egregious situation (in one famous case, the Los Angeles Police Department and Public Defender's Office shared the same mainframe, and it was discovered that minions of the prosecution were using this fact to rifle the public defender's files) and a general lack of clearcut policy for handling communication in this new medium. The bill is again up for consid-

eration after a battle of several years; though it's been endorsed by organizations from the ACLU to the Southern California Sysops' Organization, it's faced an uphill struggle against public apathy and legislative ignorance.

Public apathy? Jacobson cites startling numbers. "If you get ten letters on a topic — ten spontaneous letters, not an orchestrated campaign — that is a heavy response. That gets a legislator's attention." In the last year, Moore's office has received approximately 25 letters on ACA 36, a deluge by local standards. Under such circumstances, a single communication carries enormous weight.

In such a climate, the more channels of communication that can be opened, the better — or such was the thinking behind The Capitol Connection, a bulletin board operated by Jacobson as a service of Moore's office. Three years in the planning, the board went online in rudimentary form in April 1987 and currently exists as a multi-featured four-line system.

One of its initial purposes was to offer a channel for commentary on ACA 36, a process that's still going on. But, according to Jacobson, there's more: forums exist to comment on various legislation before the Utilities and Commerce committee on issues ranging from trucking deregulation to nuclear safety. It also includes a Law Ideas conference, which allows callers to propose the

kind of laws they'd like to see, which Moore's office in turn refers to the appropriate committee.

The Capitol Connection operates 24 hours a day at (916) 442-0746 (7-E-1), and has upwards of 1000 registered users. Jacobson maintains that the lack of packet-switched access or an 800 number has reduced traffic to an undesirable extent, and he'd like to see this problem addressed in future incarnations of the system. One of the most active crusaders for bringing the Capitol into the information age, Jacobson wants to see the Capitol Connection lead to a far more comprehensive system in which legislative offices were all accessible by modem.

Perhaps the most significant problem cited by both Moore and Jacobson is a general ignorance among legislators and constituents alike about the nature and implications of computer technology. On February 1, Moore's committee will hold an informational hearing at 1:30 pm in which various social commentators and service providers ranging from Pacific Telesis to US Videotel to The WELL will present their services and concerns to members of the committee. Called "An 'Information Age' For Everyone? Telecommunications And Information Services in California's Future," the hearing will address issues including short and long-term forecasts as to what technologies will affect Californians in the next decade, priorities, access, benefits and costs, and other important subjects. The hearing is open to members of the public as well; for further information contact Jacobson at (916) 445-4246.

If the future of electronic communication in California concerns you, write or call the offices of your legislators (particularly the members of the Utilities and Commerce Committee, for whose benefit the hearing's being held) and urge them to attend. Members of the Utilities and Commerce Committee are William Bradley (R-76th; 916/445-8211), Jerry Eaves (D-66th; 916/445-4843), Sam Farr (D-28th; 916/445-8496), Gerald Felando (R-51st; 916/445-7906), Frank Hill (R-52nd; 916/445-7550), Teresa Hughes (D-47th; 916/445-7498), Bill Leonard (R-61st; 916/445-7552), Richard Longshore (R-72nd; 916/445-2778), Steve Peace (D-35th; 916/445-7556), Richard Polanco (D-55th; 916/445-8305), Lucy Roybal-Allard (D-56th; 916/445-1670), and Vice Chairwoman Cathie Wright (R-37th; 916/445-7676).

Says Moore: "Part of the problem is the lack of understanding in general by most who are not involved with computers and don't understand the nature of the beast. The more we can bring our colleagues along, the more we can excite them, the more chance we have for updating and doing creative things in the legislature. Hopefully as an outgrowth of that there'll be new ideas that come to make us more effective in service to our communities, and in making services more readily available to them." (Assemblywoman Moore's office is accessible at 916/445-8800.)

Assembly Constitutional Amendment No. 36

RESOLVED by the assembly, the Senate concurring, That the Legislature of the State of California at its 1987-88 Regular Session commencing on the first day of December 1986, two-thirds of the members elected to each of the two houses of the Legislature voting therefor, hereby proposes to the people of the State of California that the Constitution of the State be amended as follows:

First — That subdivision (a) of Section 2 of Article I thereof is amended to read:

SEC.2. (a) Every person may freely speak, write, publish, or electronically communicate his or her sentiments on all subjects, being responsible for the abuse of this right. A law may not restrain or abridge liberty of speech, press, or electronic communication.

Second — That Section 13 of Article I thereof is amended to read:

SEC.13. The right of the people to be secure in their persons, houses, papers, and effects, including personal information stored in electronic information systems and computer data bases, against unreasonable seizures and searches may not be violated; and a warrant may not issue except on probable cause, supported by oath or affirmation, particularly describing the place to be searched and the persons and things to be seized.

In the continuing onslaught of more powerful machines and spiffier software, providing us with ever-better tools and toys, it's easy to lose sight of another profoundly influential aspect of the personal computer revolution — its impact on the larger community of which computer users usually comprise only a small fraction.

Links is a column dedicated to exploring the role of the personal computer in the community, whether local or global — bulletin boards operated by local governments, computers in the operations of service organizations, the use of computers in grass-roots political and social campaigns, and a host of ingenious applications we haven't heard about yet.

We welcome your feedback and suggestions for future subjects of this column. Please send them to Links, MicroTimes, 5951 Canning Street, Oakland, CA 94609, or send email to microx on The WELL at (415)332-6106.

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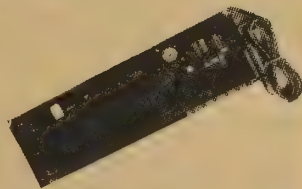
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The Show Report

By Matthew Leeds

Shows, shows, and more shows. In the last three months I've been to six computer trade shows. There are just too many shows. The cost to attend is too high for many companies and for end users. By the time you calculate the expenses for booth space, electrical power, furniture, trucking, air fare, hotels, meals, lost work at the office, literature, hospitality suites, and what not; it adds up to a very tidy sum. Hardware and software manufacturers are going to have to take a careful look at which shows to attend in 1988 or they will spend all of their time and much of their marketing budgets on shows.

All this aside, I just returned from the World of Commodore Show in Toronto, Canada. This is a Commodore-specific show that has been going on for five years. Attendance over four days is in excess of thirty thousand people, with the bulk coming in the final two days of the show. Commodore Canada co-sponsors the show with the Hunter Group, and it is such a big deal that the local school kids are let out of class to attend.

Unfortunately with so many shows having preceded it in the last few months there was little new to see. One item of interest was Comspec's SA1000 SCSI Host Adaptor for the Amiga 1000. This unique hard drive interface offers auto-booting direct from a SCSI hard disk, and includes a battery backed clock calendar. The SCSI interface has a DB-25 female connector and will work just fine with standard Mac SCSI hard disk units. The interface is fully auto-config and passes the bus. This is the first commercially available auto-booting hard disk for the Amiga. It does not use the new KS 1.2.1 auto-boot routines; Comspec has hacked its own technique into the OS.

Oxxi has worked out a marketing arrangement with the developers of A-Talk and will be handling the distribution of that telecommunications program. They will also be handling Benchmark Modula-2, including the compiler, linker, and editor. I spoke with John Houston of Oxxi, and he was very enthusiastic about the release of Benchmark Modula-2. Oxxi has been working with several other commercial developers who have been using beta versions of the language to create their own commercial applications. Modula-2 offers the structure of Pascal with the flexibility and power of C.

Jeff Braun of Inter/Active Softworks, makers of *The Calligrapher*, has sold his company. He will be starting a new software company, devoted to the development of games for the Amiga. New

The World of Commodore Show in Toronto, Canada is such a big deal that the local school kids are let out of class to attend.

offices will be opened somewhere in a lounge chair on the beach, connected to the real world via a cellular phone. John Collins, the new owner, told me that his interest in the Amiga will move Inter/Active in new directions. His background in high end broadband communications could provide some hints. Not to worry, he views *The Calligrapher* as instrumental to the success of his new venture. Support and enhancements will continue.

Look for a new word processor from the folks at Micro Systems Software, developers of *Scribble!*. Rumors have been flying regarding this new program, from its being a *WordPerfect* clone to it being a fully programmable, create your own interface, text editor. The truth is simpler, and the sneak preview I had looked more like a *TextCraft Plus* clone than anything else. I'll keep my eyes open, and perhaps I'll be able to tell you more later.

Ahoy magazine, long a favorite in the C64 and 128 markets, is starting an Amiga magazine. This brings to almost a dozen the number of publications that are already available, or soon to be released that are specific to the Amiga. This latest entry will be a quarterly. Look for the first issue on the stands around April.

Hypertek/Silicon Springs Development has acquired a public domain program G.O.M.F., and upgraded it and released it as G.O.M.F. 2.0. G.O.M.F. is an error handling and trapping program that can eliminate Guru Meditation Alerts. G.O.M.F. (Get Outta My Face) intercepts errors as they occur, offers plain English on-screen advice on how to cope with system errors and provides the tools for doing so. This new version of the program goes a long way towards user friendliness, but using G.O.M.F. is still a lot like picking up a surgical knife and performing brain surgery with no training. It offers a tremendous amount of power and control over the Amiga, but without a tremendous amount of understanding of how the Amiga operates you could easily crash the system yourself.

Hypertek also showed a TTL interface that

plugged into the RGB port of an Amiga, and provided flicker-free high-resolution monochrome output on a standard TTL monitor. The interface has an RGB pass-through port. Hypertek also showed a lightpen and a MIDI interface for the Amiga.

The Disc Company showed *Kind Words*, a word processor that incorporates multi-color graphics. The program has a lot of great features. In many ways it feels like *MacWrite* or *ProWrite*. It uses rulers to control margins and tabs, is WYSIWYG on-screen, uses multiple fonts, has mail merge capability, headers and footers, super and subscripts, on-line help, auto page numbering, decimal tabs, and is not copy protected.

Of special interest is its ability to import IFF graphics into a document. Although text cannot appear on the same lines as graphics, you can crop and size your graphics on the page. This is a remarkable addition to a word processor. Color graphics are supported in up to 16 colors. Also of special interest is *Kind Words'* use of special printer drivers to get very high quality output. A full set of SuperFonts are included in the package that are downloaded to your printer to get impressive quad-density text and graphics. Oh yes, I almost forgot to mention the 90,000 word spelling checker included with the program.

If you get the feeling I'm impressed, you're right. While I wouldn't use *Kind Words* to create the great American novel, it does excellent service for the bulk of my word processing needs. Check it out. □

Resources:

Comspec Communications Inc.
153 Bridgeland Avenue, Unit 5
Toronto, Ontario, Canada M6A 2Y6

Oxxi Inc
3430 Falcon Avenue
Long Beach, CA 90807

Inter/Active Softworks
57 Post Street, Suite 811
San Francisco, CA 94104

Micro-Systems Software
12798 W. Forest Hills Blvd., #202
West Palm Beach, FL 33414

Hypertek/Silicon Springs Development Corp
120-1140 Austin Avenue
Coquitlam, British Columbia, Canada V3K 3P5

The Disc Company
3135 South State Street
Ann Arbor, MI 48108

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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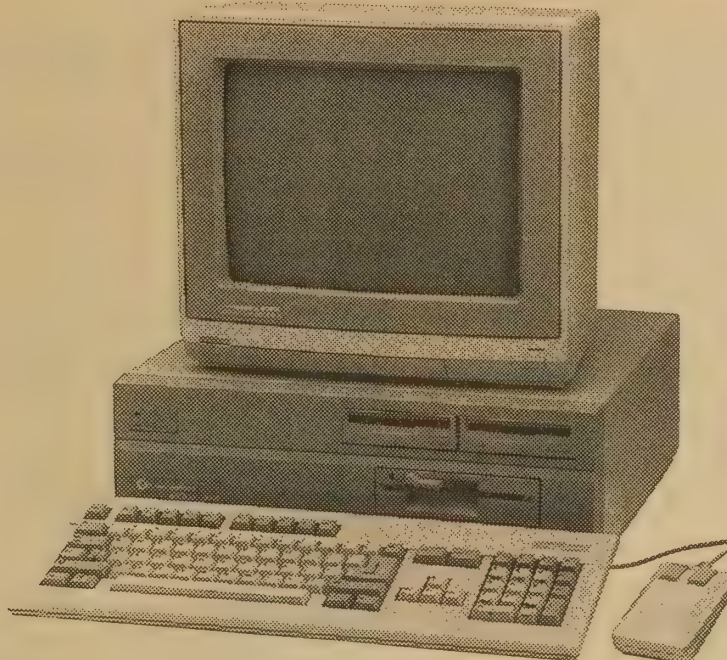
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ATARI ST

Resources For The New ST/Mega User

By Helmi Kobler

We're well into the new year and I expect that the ST and Mega users who purchased their systems during the holidays have by now accustomed themselves to the delicate art of pointing, clicking and scrolling, and are ready to get some practical use out of their machines. Whether their applications are strictly utilitarian, such as churning out documents with *WordPerfect*, or more lighthearted, all newcomers should take advantage of some fundamental resources in the Atari community. Exploring your ST alone will only lead to missed opportunities, so let the various Atari magazines, user groups, and online services help you get the most out of your machine.

Magazines

The first thing a new user should do is buy a copy of an Atari ST magazine. Though there are over half a dozen established publications, try to get hold of either *ST X-PRESS* or *ST Applications*. These two monthlies are "home-brewed," published by individuals with a staff of one or two people. Both have modest production budgets and limited circulations, so they lack the gloss found in larger publications, and are likely to be stocked by only die-hard ST dealers. They are broad focused and attempt to cover all aspects of the ST world such as general applications,

Exploring your ST alone will only lead to missed opportunities, so let the various Atari magazines, user groups, and online services help you get the most out of your machine.

rumors, new products, and programming and technical issues in various feature articles, columns and reviews. Their writers are usually dedicated ST followers with much hands-on experience. Additionally, their article lead times (the time between an article's submission to the magazine and its publication) are short — usually a month — so information is current.

ST Applications, (\$32.50 for 12 issues, 9890 River Road, P.O. Box 980, Forestville, CA 95436, 707/887-7879) tends to overemphasize programming with its regular columns on sparsely-used languages such as Forth, Modula-2 and Prolog, but often rallies around important consumer is-

sues such as poor dealer service and broken promises from Atari and other manufacturers. It has a column devoted to discussing new and upcoming products, as well as one that surveys the best and worst recent software releases.

ST X-PRESS (\$35 for 12 issues, \$75 with disk, P.O. Box 2383, La Habra, CA, 90632, 213/691-8000) has a strong focus on product reviews, publishing at least a dozen each issue. I recommend *ST X-PRESS* to any user for this reason; the volume of its reviews keeps you informed about important products that may not appear on your local dealer's shelves and would probably go undiscovered otherwise.

Both magazines, however, give you a good feel for what's going on in the ST world.

GENie

Another way to keep up with the ST world is by subscribing to General Electric's GENie, a nationwide online information service that can be accessed with your ST and a modem, an inexpensive peripheral that lets computers communicate over ordinary phone lines. GENie users can join its ST "Roundtable," a section of the service devoted to ST and Mega computers. The ST Roundtable consists of dozens of message centers where callers from around the country converse on just about every topic conceivable: desktop publishing, games, graphics, data bases, sound and music, word processing and more. Under each of these topics are dozens of sub-topics, usually focusing on specific products; under the word processing topic, for example, are exhaustive discussions on *WordPerfect*, *Word Writer*, *Microsoft Write*, *ST Writer* and other titles. If you have any question related to the ST, you can find the answer in one of these Roundtable message centers. If your question has not been thoroughly discussed already, and I'd be surprised if it hasn't, there are always a number of experienced callers, or representatives from ST developers such as Michtron, *WordPerfect*, *Soft Logik* and other companies, who will be glad to answer it on the spot. Atari Corp. also has its own message center set up where you can speak directly to Atari officials and get up-to-date news about Atari products.

Besides its message centers, the ST Roundtable also provides a large library of public domain software which users can download. Thousands of files are available — tutorials and tips for popular applications, games, pictures, songs, utilities, etc. — and more are added daily.

If you have a 300 or 1200 baud modem, you can join GENie by calling 1-800-638-8369 in half-duplex and entering "HHH" when you've connected. At the "U#=" prompt, enter "XJM11827, GENie" and hit return. Have your MasterCard, Visa or checking account number ready. There's a one-time \$29.95 registration fee, and a non-prime time \$5 hourly fee in effect during weekends and between 6pm and 8am on weekdays.

Besides its message centers, the GENie ST Roundtable also provides a large library of public domain software which users can download. Thousands of files are available — tutorials and tips for popular applications, games, pictures, songs, utilities, etc. — and more are added daily.

If you don't have a modem but are interested in getting more information about the service, call 1-800-638-9636. Don't miss out on GENie. Even if it means investing \$89 in a 1200 baud modem, GENie is still an excellent deal and opportunity to get the most out of your ST.

User Groups

Joining an Atari ST user group is often a good way to get valuable information about your machine, as well. Most user groups hold meetings once a month and feature a guest speaker or some new product demonstration. Time is often set aside for informal discussions regarding rumors, new products, bugs in software and so on. Some user groups also sponsor special interest groups (SIGs) that meet apart from the general meeting, and focus on specific topics such as music, programming or desktop publishing. User groups usually publish small, informative newsletters, as well, and compile several useful public domain programs into Disks-of-the-Month that members can purchase for a few dollars.

Be sure to attend a user group meeting if you're new to the ST scene. Your local dealer should be able to refer you to a nearby group, but if not, call Atari at (408) 745-2000 for the name and phone number of the groups closest to your area.

There is an almost overwhelming amount of information to understand and keep track of in the ST world, and without resources such as magazines, local user groups, or an online service, you're bound to go uninformed about an update to some popular software package, or the release of a better printer driver for your printer, or a new set of GDOS fonts, or a hot game, or a new business application that's crippled by bugs. Don't stay in the dark about these things. Take advantage of all the information and expertise offered by these resources. □

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

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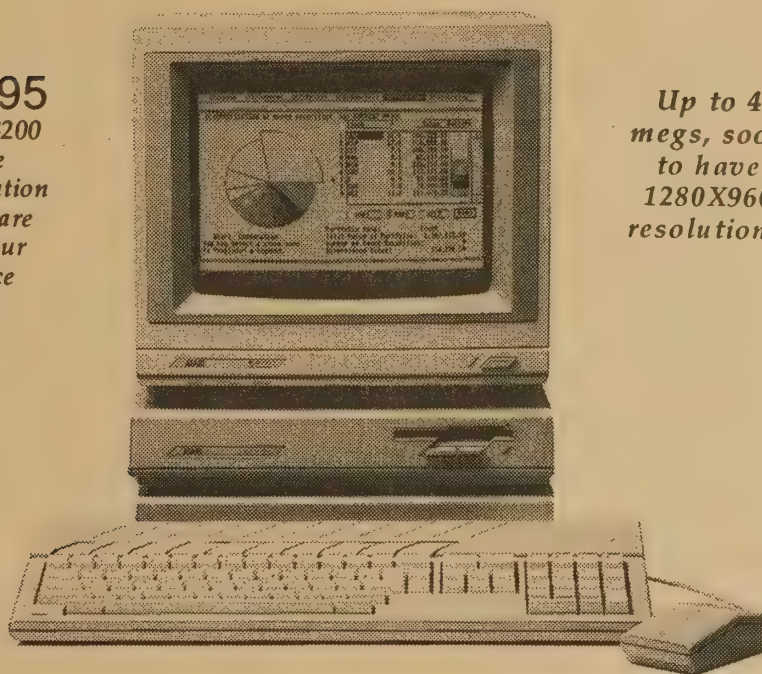
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WordStar 4.0 For CP/M

By Robert D. Athey Jr.

The new WordStar (version 4 for CP/M) came out late last summer, and MicroPro is offering upgrades for any registered users of older versions of WordStar or NewWord.

Opening the package was a surprise, as I'd asked for the standard Kaypro II package, assuming it would be two or three disks. The package contained two boxes, one with the manual, and the other with the "installation kit" — with six disks! It turned out to not be all that complicated, however.

The installation program was easy to run, and had menus to guide you to the next item needed. The program supports over 20 types of terminals (translate as computers, shown in the tabulation) and over forty types of printers, including HP Laserjets. It was easy to configure for my Itoh Prowriter (8510A) — some software companies don't support it — as it is in the WINSTALL program. I don't understand the approach of using two printer installation overlays, however; it seems unnecessarily confusing.

The new WordStar has a number of features incorporated from the NewWord program, as a consequence of MicroPro's purchase of NewStar, the company that produced NewWord. I asked Stan Reynolds of NewStar about adding math capabilities to the CP/M NewWord two years ago. He said it couldn't be done in the 64K allotted in CP/M. However, the new WordStar does have a little calculator built in, and it's very handy for doing up invoices or proposals where simple columns of figures need adding or a percentage needs to be applied. And the new WordStar uses only 54K!

A feature of NewWord I really liked, the UNDELETE for an erased line, is in the new WordStar. I use it frequently as a copy and move technique without marking a block — nice for making up tabulations. It's also a way to move a sentence from the end of a paragraph to the middle where it belongs, after re-reading what you wrote.

A new feature for WordStar is the library of "macros" you can build. These can be the simple repetitive commands you use a lot, or they can insert the signature line or letterhead with two keystrokes per line inserted. I've rigged mine both ways. You have one limitation here at 256 total characters to be defined. I didn't find that a real handicap, however.

I was intrigued by the technique used to make up macros with control or escape characters. You use a special command that tells the computer to get ready for a non-letter/number as the next

character. You'll need it to put in a carriage return within a macro, as the program thinks you are finished with the macro entry when you press a carriage return.

Naturally, I've used the program quite a bit since I received it in September. Indeed, I took the Kaypro with me on a vacation to the Big Island to finish a book chapter I was writing. I started the evaluation there, and the installation was no problem. Within six days (at about four hours a day, as I did have to snorkel and tourist, too!) the book chapter was up to 57K. I also used it to bang out several merge letters to family and a committee with a chemical problem I'm working on. I found that one cannot merge a mailing list within a merge letter set, even though they use different data files. Ah well, it's no big deal to print them separately and collate before mailing.

Since I use a variant of ZCPR, the offer of supporting ZCPR3 was intriguing, to say the least. It boils down to an internally supported path that directs the computer to go to the default disk to look for WordStar and its overlays automatically. So you can log into your B: drive and just type in "WS" and the opening screen shows up just as if the WordStar was on that disk.

The WordStar program comes not only with its overlays and related support programs, but with other goodies, as well. There is a great spelling checker in the WORD+ program, along with related files. One does all possible anagrams of any set of letters (what a help in Scrabble!), and another will search a sequence of letters and spaces for missing letters for all fits in the dictionary (crossword puzzle helper!). There are also programs to count all the words in a document, and to determine the frequency of usage of any one (or all) word(s). The Word+ is the real benefit, though. It is a well known, top rated spelling checker by Oasis Systems, and it's a great deal to have it packaged with WordStar.

The MicroPro people have become a bit more customer support-oriented, too. That's shown first of all by their upgrade for all the ancient users of WordStar in CP/M (It's nice to know a big company hasn't written us off!). Secondly, they answer calls and letters quickly, whether it's on the program offerings or on a user query as to how to make the labeling work on mail-merge. In addition, someone from MicroPro will come out to your user group meeting, and talk, and even offer a group discount on upgrades or new user purchases. Commendations for MicroPro!

CP/M Road Tales

As I said before, my evaluation of WordStar started on Hawaii. I've been carting the Kaypro-

around in airports for years, with no problems. As soon as I checked it with a games disk after my Saturday afternoon arrival, however, the screen image had shrunk to a small vertical line about an inch long about two thirds up in mid-screen. I called the computer shops in Kona and Hilo, and was told that they were closing in a few minutes and didn't handle CP/M machines, anyway. ARGHH!

On the last shop I called in Hilo I hit pay dirt. The technician told me what to check out (pull the cover off? me?), so I could save the three hours driving time, and the \$85 minimum charge. He suspected I'd jostled loose a simple plug in connection to the screen power supply. The hotel electricians came up when I called and volunteered to do the screwdriving, and look at what he suggested. No Help, but a great try.

Off to Hilo on Monday and into the shop before lunch. The technician had it fixed an hour after lunch. A soldered connection had broken, and he was "lucky" to find it. I'd instantly thought of all the really good workers in any field that just seem lucky because they know what they're doing. I checked the computer out with my own disk on his work bench, and was back to the Mauna Kea before dinner, most pleased with "The Computer Store" of Hilo.

As I've said before, service is where the small computer store will make and keep its friends and customers over the long haul. Fortunately, we have a similar store in the East Bay, the El Cerrito Heath Zenith store. Bob Dang, the manager, emphasizes service, even to the point of someone coming to your site to take care of nasty problems.

As a last note, not pertaining to WordStar 4, I recently received a brochure on a new publication called Science Software. As my business includes scientific applications of my own computers, it looked interesting. Order from John Wiley & Sons at (800) 526-5638. I plan to give it a review as soon as they send it. □

CP/M COMPUTERS SUPPORTED BY WORDSTAR VERSION 4

Adds 25	Osborne 80 col.
Adds Viewpoint	Qume 102
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DEC VTs 52 and 100 (ANSI Std.)	Zenith Z19
Falco ADM 31 Mode	Heath H19
Televidoes 912/920 and 925/950	Hazeltine 1500
Lear Siegler ADM 3A, 22 and 31	Kaypros II, 4 and 10
Liberty Freedoms 100	Morrows MDT 20,
and 200	60 and 70

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541. Copyright © 1988 by Robert D. Athey Jr. All rights reserved.

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The IIGS Bookshelf

By Mike Markowitz

After paying for the computer, the monitor, two kinds of disk drives, the printer, the memory expansion card, and Woz only knows what else, the typical IIGS owner may not have much left to spend on books. After acquiring *DeluxePaint*, *Multiscribe GS* and a few games, the lucky owner may not have much time or inclination to read, either.

Nevertheless, computer book publishers are a hearty and daring breed, and along with the soaring sales projections for the IIGS, a boomlet in new titles about our new machine seems to be underway. Books about the Apple IIGS fall into two main categories: official and unofficial. The official books carry Apple's blessing and are handsomely published by Addison-Wesley of Reading, Massachusetts. The unofficial titles come from a handful of big and small publishers.

The official books are part of Addison-Wesley's Apple Technical Library, which is authored anonymously by Apple's own tech writers. They are printed in two colors, well-illustrated with charts, diagrams and schematics and thoroughly indexed. Mainly intended for programmers and product developers, they offer a wealth of tantalizing information to the general hobbyist about hidden capabilities and not-yet implemented features of the computer. Titles include:

Technical Introduction To The Apple IIGS (\$9.95) an overview of the design, system architecture, programming environment, Toolbox, graphics modes and sound, details the differences between the IIGS and earlier Apple II models.

Apple IIGS Hardware Reference (\$24.95) required reading for hardware developers, this volume provides mechanical and electrical specifications for all the internal and external connectors, and details the workings of the slots and ports.

Apple IIGS Firmware Reference (\$24.95) describes the programs and subroutines stored in ROM, except for AppleSoft BASIC and the Toolbox (which have their own manuals). Also describes the new IIGS Monitor, a low-level programming and debugging aid for assembly language programming.

ProDOS 16 Reference (\$29.95) detailed description of the new IIGS operating system. Includes a 3.5" disk with a small Exerciser program that lets the user practice making system calls.

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1988 by Mike Markowitz.

If you're a programmer and you can only afford one book on the IIGS a good bet would be Gary Little's *Exploring the Apple IIGS*.

Coming soon will be the two huge volumes of the Toolbox Reference (\$26.95 each). The draft version, which has been available through the Apple Programmer's and Developer's Association, reportedly runs to over 1500 pages.

One volume in the Apple Technical Library that is indispensable to programmers but accessible to even the most non-technical user is the *Apple Human Interface Guidelines* (\$14.95). This slim volume (144 pages) defines the desktop "look and feel," which Apple considers to be its most precious corporate asset. It is equally applicable to any Macintosh or Apple II computer, but the advice on how to use color and sound are particularly important to the IIGS community.

If you're a programmer and you can only afford one book on the IIGS a good bet would be Gary Little's *Exploring The Apple IIGS* (535 pages, softcover \$22.95). Although published by Addison-Wesley, this one is not "official." It presupposes some acquaintance with assembly language, or at least a willingness to wade through program code. A disk with all the programs in the book, plus some useful utilities, can be ordered for an additional \$20.

The rate at which things are changing in the IIGS world means that the reader should probably avoid any IIGS books with a publication date earlier than 1987. Stay away from books that just rehash what's already in your User Manual. It's a complicated machine. You won't understand everything the first time. Stretch your mind. That's what you bought a computer for, isn't it?

In future columns I hope to explore IIGS memory cards, hardware add-ons, and programming languages. No, I haven't forgotten the millions of other Apple IIs out there. I'm planning a

roundup and roast of recent game software. Let me know what you like and don't like. Write to:

Mousekowitz
27425 Abanico
Mission Viejo, CA 92691-1101

Another book worth noting is the second edition of *AppleWorks* by Charles Rubin, published by Microsoft Press (softcover, 320 pages, \$18.95). This edition documents all the changes in Version 2.0 of our beloved integrated productivity tool. The rather tricky new MailMerge routine is covered in detail, and an Appendix gives capsule reviews of a wide range of *AppleWorks* add-ons. Some reviewers are too polite to point out that books about *AppleWorks* enjoy a thriving market mainly because so few users bother to actually purchase a legal copy of this splendid program. *AppleWorks* has an excellent manual of its own, but this fact is likely to remain obscure as long as Apple continues to treat its most successful software product as an unwanted orphan.

RESOURCES:

Addison-Wesley Publishing Company
Route 128
Reading, MA 01867
(617) 944-3700

Apple Programmer's and Developer's Association
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Microsoft Press
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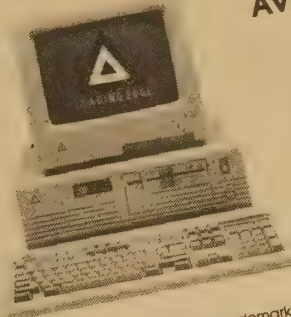
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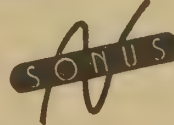
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Ashton-Tate's Free BBS, And Other News

By Mary Eisenhart

Good news for Ashton-Tate users: A-T has announced the **Ashton-Tate Support BBS**, a multi-user board that offers free support to users of MS-DOS or Macintosh computers. Its primary function is to provide technical support and answer questions about A-T software; customers will receive an answer to their question from company technicians within 24 hours of their call. The board also offers multi-user teleconferencing, electronic mail, classified ads, separate bulletin boards for each of the company's products, and a file library of sample software programs and articles from Ashton-Tate's monthly *Technotes*. The board will also be used to conduct marketing surveys among its subscribers.

Rich DiGiovanni, A-T vice president of its Support, Services, and Information Group, comments, "We hope to serve thousands of Ashton-Tate customers with this new support alternative. It also gives us a direct line to the people who use our products, serving as a valuable mechanism for feedback."

The board is accessible at (213) 538-6196; out-of-area users can reach it via PC Pursuit. If you'd like more information, call **Lynn Fireside** at Ashton-Tate, (213) 538-7011. We'd like to salute Ashton-Tate for offering users this valuable free support resource, and encourage other companies to follow suit.

One More Time: **Thomas Donaldson** of Sunnyvale raises a question which may be on some of your minds. "Some time ago," he writes, "we sent a notice to *MicroTimes* of our bulletin board, **Cryonics and Immortality BBS** (8N1, 1200 baud only, 714/734-0139, 3 pm to 6 am PST). We were very pleased to notice that we got a mention in the October 1987 issue (#36). However, since that time our listing seems to have disappeared."

Yes, Thomas, your listing, and others sent to us in the last couple of months, are in something of a state of suspended animation themselves. As many of you may have noticed, our listings have been essentially in a frozen and unchanged condition for the last few issues, and they will continue to be so through this issue and the next, March.

Our April issue, as we've explained previously, will feature all-new listings which will be updated quarterly. These new listings will be limited to 15 words; we reached this decision with some regret, in the full realization that many organizations and boards offer a pretty wide range of features and benefits. However, confronted with all too many "listings" that approach 500 words in length, and being endowed with limited time and space, we have felt compelled, in fairness to all, to set this limit. Those who feel that they can't possibly do their system or organization justice in 15 words are cordially invited to include in the ad a phone number or address where interested parties can obtain further information.

This means several things. One, if you've sent us a listing since November 1 or so, and if it's current and 15 words or less, you should not panic when you don't see it in the listings. Two, if you have not sent us an updated listing, or if you're

thinking better of that *War and Peace*-length listing you sent us and its probable fate with Procrustean editors, time's a-wastin'. Use the form in this issue, and send us your new listing ASAP. **We must receive your listing by February 1, 1988, if it is to appear in the April issue.**

We'd also like some feedback on a related issue. Historically, we've listed bulletin boards in all area codes; recently, for lack of available space, we've occasionally run only Southern California area code listings in Southern California, Northern California only in Northern California. Having received one or two worried letters about this, we'd like to ask for a show of hands, as it were — how important are listings of bulletin boards outside your area to you? Are you PC-Pursuiters checking out boards all over the country, and in need of non-local listings? If you feel inclined to drop us a line on the subject, please do so: US mail to User Group Network, 5951 Canning Street, Oakland, CA 94609, e-mail to **microx** on **The WELL**, (415) 332-6106.

Speaking of out-of-area BBSs, from the beautiful Ala Moana Hotel in Honolulu comes a listing for the **Cassia Express BBS in Singapore**, (065) 344-9163. It operates 24 hours a day and supports 300/1200/2400 baud rates. The sysop is N.M. Rahman.

Also BBSing in foreign lands: **Fidonet Argentina**, the first Fido node in Argentina, which has over 450 subscribers. It specializes in South American issues, and has public domain software libraries. Sysop **Pablo Kleinman** invites you to call his board from 3 pm to 11 am PST. Parameters are 8-N-1, 300/1200 baud; the board's number is 011-541-22-4197.

Once again we hear the cry of the orphan. **Harley Ristad** of the **West LA Amstrad User Group** writes that the group is now the **Amstrad User Group, USA**. He continues: "Sears has dropped the Amstrad PCW8256 [sold as a word processor, but capable of other feats] and has made orphans of all PCW8256 owners, so we must now support each other more than ever. Because the PCW8256 uses CP/M, not MS-DOS, it is not IBM compatible. In addition, it uses a non-standard 3" disk. Further, the documentation is far from complete. For these reasons there is a special need for an international Amstrad PCW support group."

"I am a retired computer engineer and, as a labor of love, I will, pro bono, endeavor to meet this need, and I greatly appreciate your contribution to getting the word out." So if you're looking at that Amstrad and scratching your head, call Harley at (213) 397-7981, and encourage him in his laudable efforts.

Also on the orphan front, the **San Fernando 99ers' Jim Edwards** of La Crescenta writes, "It has been over four years now that Texas Instruments got out of the home computer market. After a brief panic, users settled down, banded together, and formed an extensive network of user groups that remains very strong today. Our monthly newsletter lists ten active TI-99/4A user groups in the LA area alone." Jim adds that the SFV 99ers have recently changed their mailing address — it's now

2823 Sanborn Ave., La Crescenta, CA 91214. You can also get more info by calling Jim at (818) 248-9558.

That's it for another month. Remember, keep those spiffy new elegantly-brief listings and news about your group's activities coming, to User Group Network, 5951 Canning Street, Oakland, CA 94609; email to **microx** on **The WELL**, (415) 332-6106. And as ever, thanks. □

BULLETIN BOARDS

065

Remote Bulletin Board. (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss.

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finitly BBS. (209) 521-6240. Inn Finitly is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

Bertha Board. (209) 239-9853. 8-N-1, 300/1200/2400 baud, 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

Motherload-64 BBS. (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

305

Miami PC Users Group BBS. (305) 621-7534. 2400 baud, 24 hours. PC-Pursuitable. Sysops: Ken Burch and Bob Ash.

Miami's Big Apple. (305) 948-8000. 300/1200 baud, 24 hours. Online Apple users group with heavy Apple support. PC Pursuitable. In seventh year of operation. Sysop: Bob Sherman.

312

Feminist BBS. (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp. for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunication. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. On-line tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 300/1200/2400 baud, 8/N/1, 24 hours. Sigs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all Sigs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War. (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

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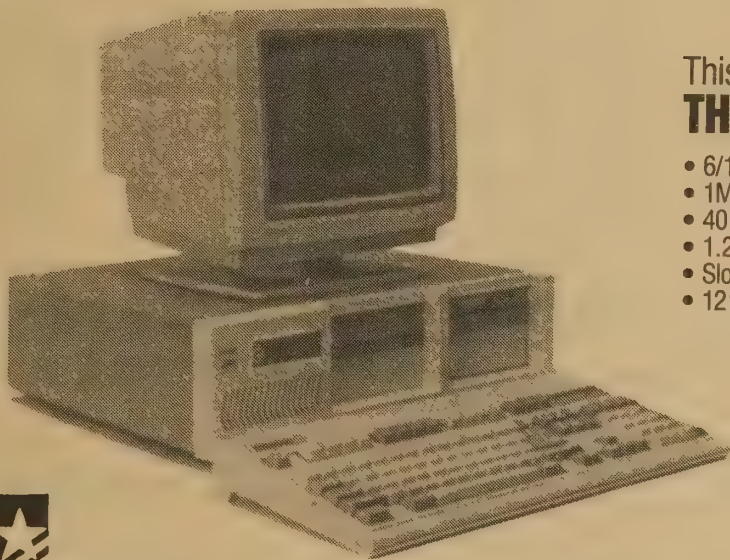
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The Shark's Head BBS - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

Bay Area Atari Users Group 24 hour BBS, 300/1200, ATASCII or ASCII. Sysop Mark Bloem-enkamp. (408) 249-7722.

Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPRI Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

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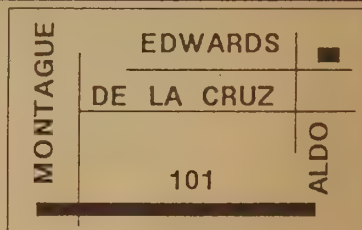
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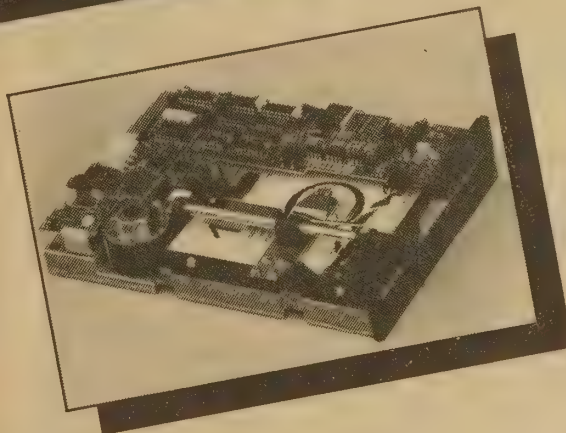


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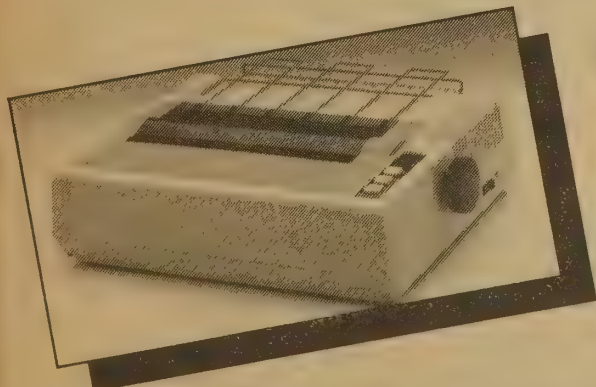
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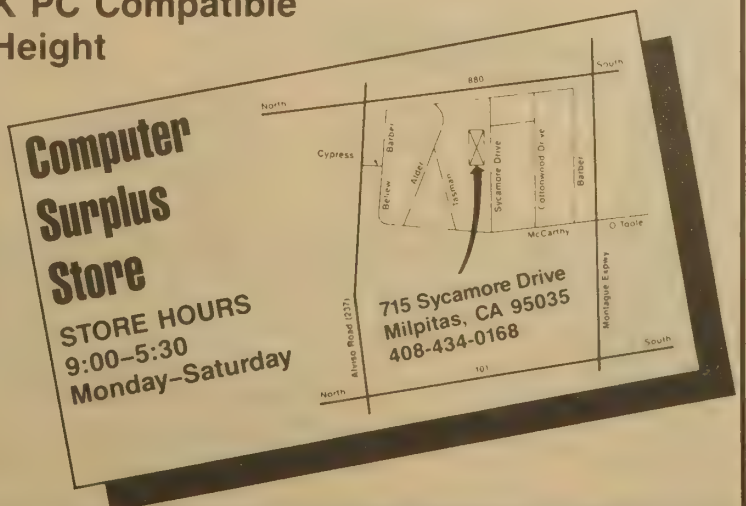
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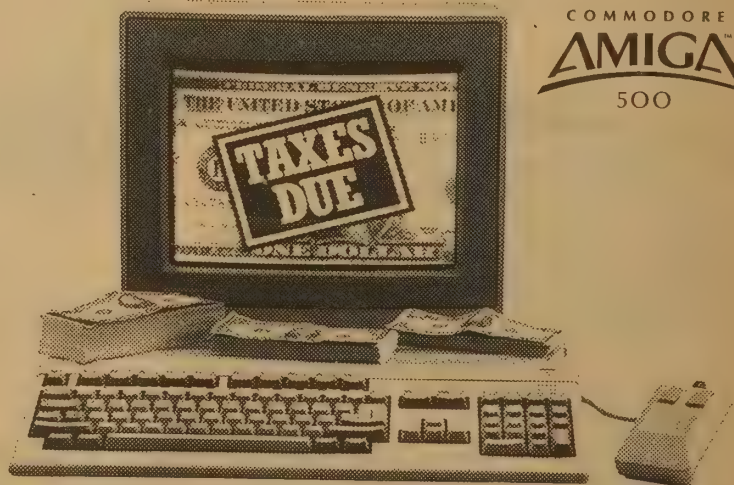
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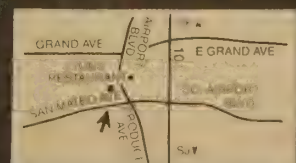
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Richmond OPUS. (415) 620-6500. 300/1200 baud. 8-N-1. 6:00 am to 6:00 pm daily, 24 hours on weekends. City of Richmond BBS. Public information on city activities. Download information files.

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The Pirate's Hollow BBS. 24 hours, 300 baud. Ye Cap'n: The Atari Pirate. (415) 593-6784.

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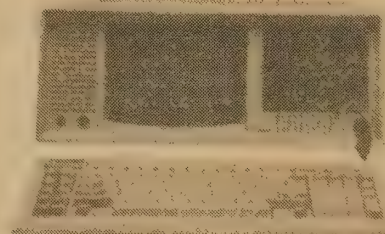
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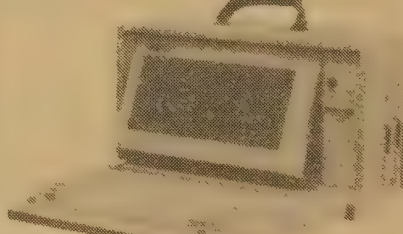
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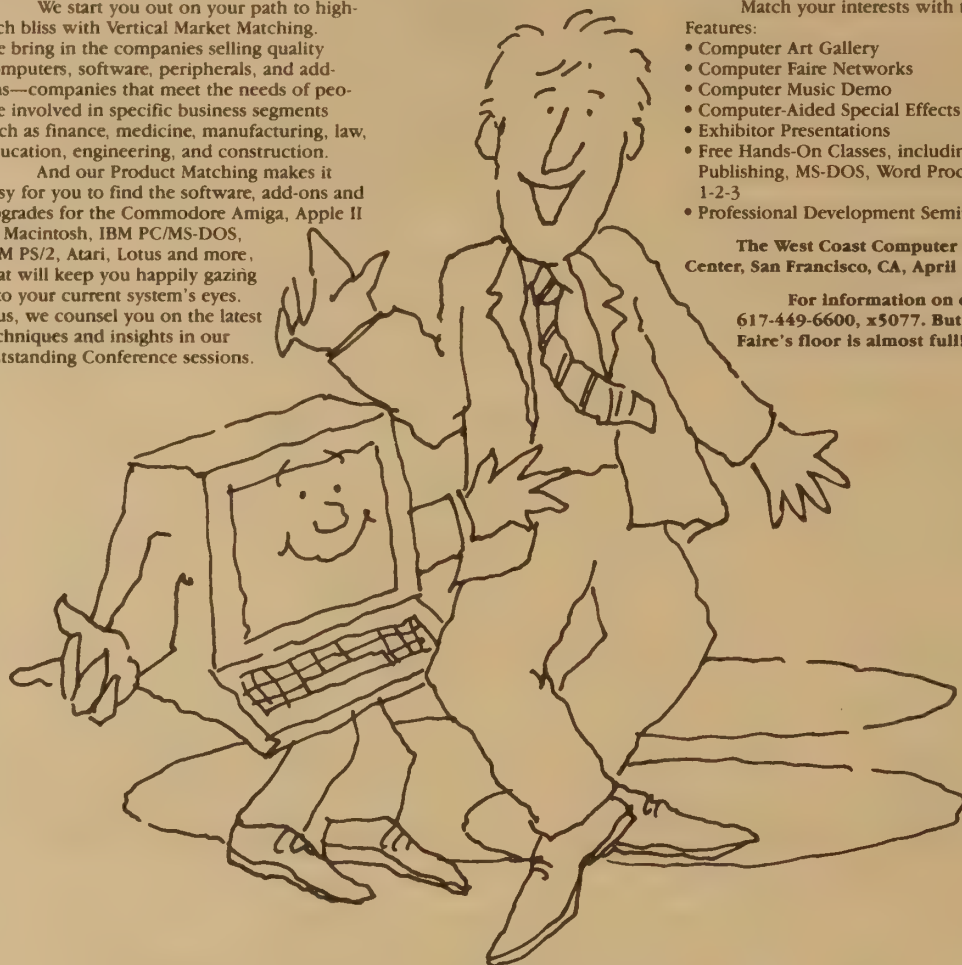
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Dynasty BBS. (916) 685-8690. 300/1200/2400 baud, 8-N-1, 24 hours. ComputerRooters Bulletin Board. Sysop: Henry Hoover.

The City Of Grey. (916) 423-3987. 300/1200 baud, 24 hours. Atari 8 bit BBS. Sysop: The Sheriff.

CoCo BBS. (916) 486-1594. 300 baud, 7-E-1, 24 hours. Sysop: Bill Drennon.

non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

Computer Professionals For Social Responsibility. P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay). 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. 609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Core. Meets Wednesdays at 7:30 pm. Call Pete at (415) 952-9309 for address and info.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues \$10/yr.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area Micro-Processor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Byte Hum. A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

Society for Technical Communication. STC is a professional organization dedicated to furthering the art of technical

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Community Entrepreneurs Organization (CEO). Business networking group meets in nine chapters around the Bay Area. Share information on tech and

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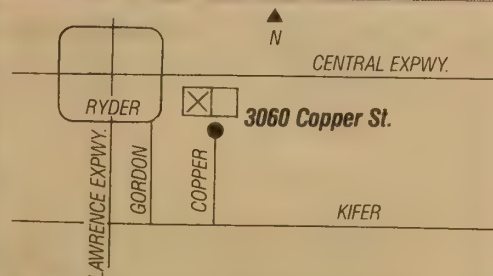
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communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-8:00 pm; call Sarah Collings, (415) 383-9631 for info or write to P.O. Box 2706, San Francisco, CA 94126.

North Bay Users Group (NBUG). Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

Robotics Society of America. Dedicated to disseminating information about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564.

Silicon Valley Computer Society. Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

PicoNet. A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call (408) 374-8090 for recorded message on next meeting's topic.

MicroPsy. Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

C Group of Northern California. Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

BADGE-Bay Area Developers Group. Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

California Genealogical Society Computer Interest Group. Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call Bill West (415) 235-6107 for information.

Hebrew Users Group. Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793. Newsletter: \$750/4 issues (\$15/institutions). Write: HUG, c/o Berkeley Hillel, 2736 Bancroft Way, Berkeley, CA 94704.

Gay/Lesbian PC Users Group. We meet on the second Sunday of each month. This is the group where we show our hardware and software and share our knowledge. All levels of users are welcome. Meeting place is the MCC San Francisco, 150 Eureka Street. For more info, contact Jim at P.O. Box 42429, San Francisco, CA 94101, (415) 334-9761.

ComputerRooters. ComputerRooters' purpose is to foster the science of genealogy through educational and research programs. Among other things we show how you can use your computer to further genealogical research. Our library of computer diskettes ranges from useful public utility programs to shareware genealogy programs and is constantly being expanded. Contact Maxine Roberts at P.O. Box 161693, Sacramento, CA 95816. BBS: (916) 685-8690 (Dynasty BBS), 300/1200/2400 baud, 8-N-1, 24 hours.

International Interactive Communications Society (IICS). San Francisco Bay Area Chapter meets the second Tuesday of each month. Meetings alternate between San Francisco and Mountain View. National Office: 2120 Steiner St. San Francisco, CA 94115. (415) 922-0214. San Francisco Bay Area Chapter: P.O. Box 1372, San Carlos, CA 94070. Hot Line: (415) 328-7318.

Bay Area Automated Mapping Assoc. (BAAMA). An association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur on odd numbered months at various locations throughout the great bay area. P.O. Box 1427, Mill Valley, CA 94942. Contact Jake Armstrong, 1195 Third Street, Room 125, Napa, CA 94558. (707) 253-4351.

NFL-FOOTBALL: Free Open Organization To Better All League Logistics. New power algorithm to develop. Open to all. A bulletin board to go on line on Sept. 13, 1987. Will improve your understanding of the finer points of football performance. Meet once a month to get things started. Join a team research group. Opportunity to brush up on your programming skills, amateur or professional. Call the Construction factory for more information. Or send SASE for full particulars. The Construction Factory, 115 Aspen Drive, Pacheco, CA 94553. (415) 685-9366 or (415) 432-4526.

tecNICA. tecNICA volunteers donate two or more weeks of their time to support Nicaragua with their computer, engineering or other skills. Contact David Greighton, 2727 College Ave-

nue, Berkeley, CA 94705. (415) 848-0292.

AI-Expert System for Business (ESB). Meets 1st and 2nd Sunday in San Francisco. "Investigate real business PUG expert system solutions. Determine market opportunities. Guest speakers, discussions and group research/projects. BBS access soon. Quarterly newsletter. Beginners and businesses welcome. Call George Polzer (415) 564-6664 for more information.

Professional Association of Secretarial/Word Processing Services (PASS). A non-profit organization of word processing owners (including home-based services). Dedicated to promoting and maintaining quality and professionalism within the trade. Also provides a network of contacts and a spirit of cooperation. Contact Nina Feldman at 655-4296.

USER GROUPS

APL

APLBUG (APL Bay Area Users' Group) has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are \$15. Contact Curtis Jones, (408) 292-4060, for information.

AT&T

Bay Area AT&T PC6300 Users' Group. Demos, technical help and more. Meeting time and location varies. Contact Joe Mahoney (415) 586-8376 or Maurice Aranda, (415) 972-5436.

ACTRIX

ACTRIX Computer Enthusiast Society. Membership (\$20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

Coleco Adam Users Group. For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

South Bay ADAM Users' Group. Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

East Bay ADAM Group. Forming an ADAM users group in the East Bay area. Call Tom for more information - (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

AMIGA

First Amiga User Group. We offer demonstrations of software and hardware, a public domain library, and general

user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejoo, (415) 595-5452.

First Amiga User Group the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

ACCESS. The Amiga and Commodore Computer Enthusiast Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

Sacramento Amiga Computer Club (SACC). Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

Amiga East Bay Info Exchange (AEBIE). P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

AD-Amiga Developers Group. Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

AEBUG-Amiga East Bay User Group. The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley, 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

AUGment, the Amiga User's Group of Silicon Valley. Meets every second Friday, 7:30 pm, at Milpitas City Library, 40 North Milpitas Blvd., Milpitas. Video Production, C programming, and hardware SIGs. Contact Jim Thomas, P.O. Box 1863, Fremont, CA 94538-0186. (415) 651-1160. BBS: (415) 659-9169.

Amiga Addicts Anonymous. Meets the fourth Tuesday of each month, 7:30 pm, at 1331 Concord Ave., Concord (CCC Water District) CA. Q&A session begins at 7:00 pm. For more info, contact Jeff Chase, president, P.O. Box 4669, Walnut Creek, CA 94596. (415) 933-0217. BBS: (415) 283-5469.

AUM-Amiga Users of Marin. Meets the third Wednesday of each month, 7:30, at the College of Marin, Science Center, #190, Kentfield, CA. For more info, contact Bob Galvan, 119 Willow, Corte Madera, CA 94925. (415) 924-5384.

Stockton - Modesto Amiga Users Group (SMAUG). Meets last Wednesday of each month at 3525 Benjamin Holt Drive, Central Lounge, Willow Glen Apts., Stockton, 7:30pm. For information call Rainer Kummerle. (209) 957-8620.

ASCITEC: The Amiga Science and Technology Users Group. Meets second Thursday, 5:00-7:00 pm, at Lockheed in Sunnyvale, B/147, Room 4-C. Scientific/Video Applications. P.O. Box 201, Los Altos, CA 94023. (408) 742-9110.

San Francisco Commodore User Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstrations, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Northern California Amiga Club. Meets 2nd Saturday of the month at 2:00 pm. Contact David L. Murphy at (916) 472-3237 for meeting place or write P.O. Box 54, Bella Vista, CA 96008.

APPLE

San Francisco Apple Core Special Interest Groups, BBS, large public domain software library, newsletter, help network. For meeting and current events information, call (415) 771-5830. Recorded message 24 hours, live person sometimes during business hours. Leave name and address to receive information. Draconet BBS (415) 781-6645 modem line.

The AppleWorks Users Group. c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

SPCA (Society For The Prevention of Cruelty To Apples) Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize hard / software, demonstrations, lectures, discussions, \$20 per year, pro-rated after June. Meetings last Wednesday of the month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

San Leandro Apple Eaters Users Group. Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

Pen-Apple (Peninsula Apple Users Group) Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

Diablo Valley Apple Users. Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware

and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

Roseville Apple Core. Discover your Apple's Core! We meet on the second Wednesday and fourth Tuesday of each month, 7:00, at SMUD Foothills Bldg., Training Room D, at Don Julio and Elkhorn. There are additional SIG meetings for AppleWorks, BASIC, Telcom and Macintosh. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just \$12 yearly membership. C'mon out and bring a friend. For more info, contact Bruce McLeod, president, P.O. Box 1377, Roseville, CA 95551. (916) 723-6422.

Apple Sac. (Sacramento) Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave., 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

Stanislaus Apple Group. You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

Santa Cruz Apple User's Group meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

Apple Gardens. New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

Apple P.I.E. Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

ATUNC-Apple Three Users of Northern California. Explanations, demos, large public domain library. Mailing address: P.O. Box 1528, Mill Valley, CA 94942. On Apex and Draconet BBSs.

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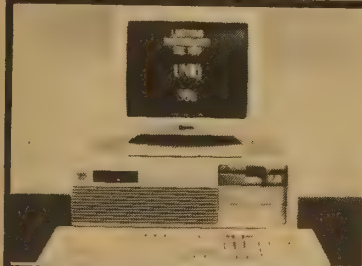
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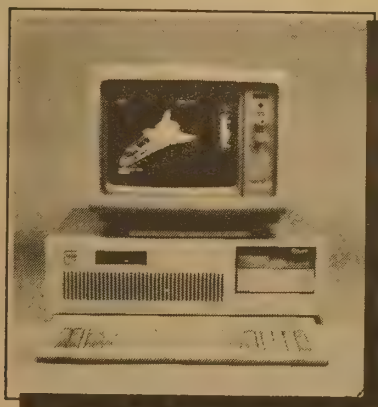


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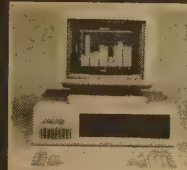
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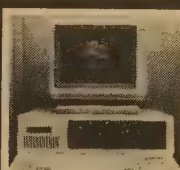
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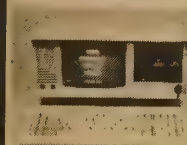
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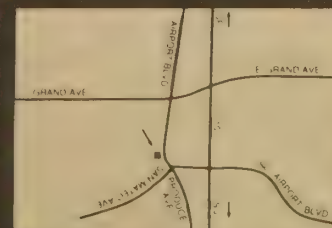
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Apple East Bay Users. Meets the first Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

Apple Pickers of Sonoma County. Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

TVAUG-Tri Valley Apple II User's Group. Meets on the first Thursday of each month, 6:30 at 7079 Commerce Circle, Pleasanton, near the intersection of Hwys. 580 and 680, to discuss our Apple IIs. A special Appleworks group meets on the second Thursday of each month. For more info, contact Dan Baisley or Esther Farnstrom, 9814 Davona Drive, San Ramon, CA 94583. (415) 828-6237 or (415) 829-3672.

Apple Blossom User Group. Meets 1st and 3rd Wednesday of each month at 7 pm at 290 International Circle, San Jose CA 95119. All Apple users welcome. Apple II, II+, IIc, IIe, III and Macintosh. No matter which Apple you have we have a group for you. Contact Ray Enochs, P.O. Box 53323, San Jose CA 95153. (408) 723-9141. ABUG BBS (408) 227-3993.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont, 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

ASHTON-TATE Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

East Bay dBASE Users Group. Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

dBase II/III SIG of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

DBDVLPRS (dBaseIII Program Developers). Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

ATARI ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership (\$15/

year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month at 19th Ave. Diner, 19th and Lincoln Avenues, S.F. Call for times. Contact Bill Zinn at 753-8483.

A.C.M.E. (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Meets the first Thursday of the month at 7:00pm at the Contra Costa Water District Building conference room in Concord. Meetings free. \$20 yearly membership comes with newsletter, discounts, raffle tickets. For information contact Mike at (415) 798-6565.

Bay Area Atari Users Group We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

COAST User Group (California Original Atari ST). Public domain disks, MIDI, support, newsletter, help for the Atari ST line of computers. Advice and programs not to miss. Meetings on the 3rd Wednesday of each month, at The Berkeley Conference Center, 2105 Bancroft in Berkeley, CA, 7:00 pm, 6:30 for beginners. \$1.00 admission for non-members. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues \$30.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

Redwood Atari Group (R.A.G.) Meets 4th Saturday, 1-4 pm, at Coddington Meeting Room, 1100-B Coddington Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

E.S.C.A.P.E. (Enthusiastic Santa Cruz Atari Programmers Exchange). Full software and hardware support of both the ST and 8-bit computers. For information call Chris Smart at (408) 335-4384.

ATTACHE Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

First Attache User Group News. Support, news, and co-operation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, Ca 94117, (415) 221-3415.

AUTOCAD AutoCAD Users Group. Call Gen Katz (415) 530-8870 for information about future meetings.

AutoCAD User Group. Call Volker Ackermann, (415) 331-9466 for information.

AutoCAD Users Group of Santa Cruz. Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

BASIS Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

BONDWELL Bondwell Users Unite! Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

BPI Bay Area BPI Users Group meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

CANNON Cannon AS 100. Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville, CA 95688.

CASIO Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

CCS DESIGNER CCS Designer CAD User Group. CCS Designer user group forming. All those interested call (415) 692-7250.

COMMODORE San Francisco Commodore Users Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstration, eprom programmer, BBS-

ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 686-4049 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

The Commodore Connection User Group (CCUG) Meetings at Homestead Savings, 14th and "A" St., Antioch, 3rd Monday of the month, 7:30 pm. Contact Walt Moxley, 2229 Santa Maria Drive, Pittsburg, CA 94565. (415) 458-3318. BBS: (415) 458-1005, Commodore only, 24 hours, 300/1200.

Commodore User's Group of Hayward. For information write P.O. Box 2072, San Leandro, CA 94577.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

Santa Rosa Commodore Users Group. Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

Family Roots Searchers. Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Silicon Valley Commodore Computer Club. Meets 4th Wednesdays, H.P. 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

ACCESS. The Amiga and Commodore Computer Enthusiasts Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

C.O.W. Commodore Owners

Workshop. Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

Fairfield Commodore User Group. Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

FUNHUG — Fremont, Union City, Newark, Hayward Users Group. A user organized, user operated, user group not affiliated with any computer or software manufacturer or distributor. We have a Commodore and an IBM section in our group. Group meets every third Wednesday at 7:30 at 5445 Central Ave., Suite 4, Newark.

64/MORE, San Jose Chapter. Meets the first Sunday of each month from 6 pm to 9 pm at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, North Valley Chapter. Meets the second Saturday of each month from 10 am to noon at the Milpitas Public Library, 40 Milpitas Boulevard, Milpitas. For information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Cupertino Chapter. Meets the third Saturday of each month from 3 pm to 6 pm at the Saratoga Public Library, 13650 Saratoga Avenue, Saratoga. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Campbell Chapter.

Meets the fourth Tuesday of each month from 6:30 pm to 9:30 pm at the Santa Clara County Public Health Building, 2220 Moorpark Avenue, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

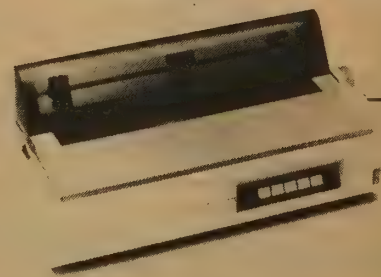
Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont, 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

CO-OP: Commodore Owners of the Peninsula. Meets third Saturday of the month, 1:00-4:00 pm, at the Foster City Recreation Center, Room 103, 650 Shell Blvd., (corner of E. Hillsdale Blvd.), Foster City, CA 94404. Membership \$25/year. Non-members, \$2/meeting. Contact P.O. Box 280495, San Francisco, CA 94128. (415) 595-8770.

CLIPPER Bay Area Clipper User Group. The newly formed BACUG is the only user group in Northern California affiliated with Nantucket, developers of Clipper. It will operate as a SIG of the San Francisco PC Users Group. All persons interested are invited to attend the meetings. Entry is free to BACUG members; guests will be charged \$5. For meeting times and locations contact Mike Pelladino at (415) 751-2719.

COMPAQ SF Compaq Users Group is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

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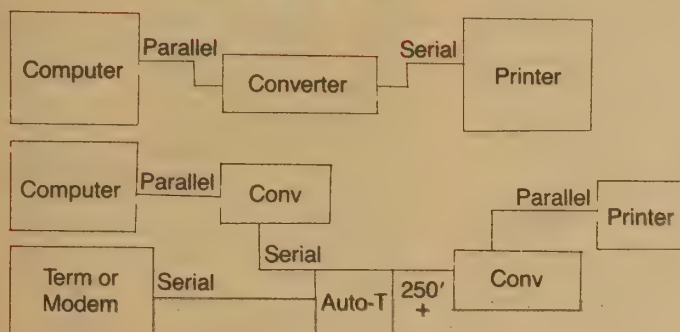
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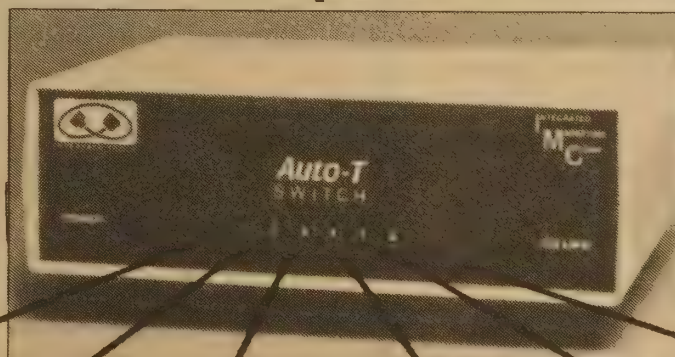
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Berkeley Compupro. Berkeley Compupro User Group meets 4th Thursday every other month. Company Reps attend meetings. For more information call Barry at (415) 665-4733.

Hayward Compupro Users Group. Meets 3rd Saturday of every month in Hayward, California. Sponsored by Automation Sciences International. Meetings held at 22532 Foothill Blvd., Hayward, between 'B' and 'A' Streets. You may call (voice) (415) 886-2980 or (modem) (415) 886-4734. The CP/M Connection for further information. Topics include: hardware & software problem identification and solution, upgrades, new products, CP/M, CCP/M, ZCPR and getting the most out of application software. Other users and interested parties are welcome. Group founder: Michael D. Lipshutz.

COMPUTER ASSOCIATES

Computer Associates Users Group of Northern California. Meets third Wednesday of every other month, 6:00-7:30 pm, at the Slovenian Hall, 2101 Mariposa Street, San Francisco. For local Computer Associates Software users looking for extended support. Sponsored by J.C. Lukrich & Co. Contact Beth E. Markus (415) 864-6770.

DATAFLEX

Dataflex User Group. For more information call Alex at (415) 433-7944.

DEC

Silicon Valley DEC PC Users Group. Meets 2nd Wednesdays 7-9 pm at Kierulff Systems 1180 Murphy Avenue, San Jose. Contact Gary Catalano (408) 275-1133.

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ers (Dinosaurians?) For owners of this orphan Z80 5100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

EAGLE

Eagle Computer Users Group. P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Tandem Computer H.R. Training Room at 10300 N. Tantau Ave., Cupertino, from 9:30 am to 12:00 noon.

Screaming Eagles User Group For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. \$10/year individual, \$20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

Eagle Computer Users Group - ECUG. Meets 2nd Mondays, 7 pm, 6132-66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426).

EPSON

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan User Group. Meets 2nd Thursday, 7 pm, Lockheed Bldg 162, Sunnyvale, CA. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

HEWLETT-PACKARD

Bay CHHU, HP Laptop & Handhelds. Meets 2nd Saturday of the month. Contact Jim Horn (707) 523-4890 or Michael Felsenstein (415) 564-8279.

INTEREX is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

IBM

South County PC Users Group Meetings held second Thursday of each month at St. Clements School Library, 730 Calhoun St., Hayward. Public Domain and shareware disks, newsletter. Contact Bob McCloud (415) 537-9899.

Silicon Valley Computer Society. New users SIG, 7:30 pm, 2nd Wednesday at Hewlett-Packard Co., Bldg. 50, 5301 Stevens Creek Blvd.; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

California PC LAN Users Group. 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnell, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

The Bay Area Computer Society Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

IBM PC Users Group of the Redwoods. Meets on the second Thursday of the month, 7:00 pm, at Santa Rosa Veterans Memorial Bldg. Anyone interested in PCs and/or compatibles is welcome. Contact Michael Adams, P.O. Box 1009, Rohnert Park, CA 94928, (707) 664-8320. BBS (707) 546-4938.

Sacramento PC Users Group. Over 1000 members. Meetings at Holiday Inn Holiday, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

SF PC Jr User Group meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

San Francisco PC Users Group. Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, \$30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

Monterey Bay PCjr Users Group. Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second

Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

Valley PC Users Group. Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

FUNHUG PC—Fremont, Union City, Newark, Hayward User Group. For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at the Fremont Main Library, 39770 Paseo Padre, Fremont, CA at 7:30 pm. We have software/hardware demonstrations and visits from manufacturers. Our library contains over 350 disks of public domain software. There are no dues, beginners are always welcome. For more info and map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

Marin-Sonoma PC Users Group. Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

Santa Cruz Computer Society. Meets on the third Thursday of the month, 7:00 pm, at Center 2000, 2nd floor of the Palomar Hotel, 1344 Pacific Ave., Santa Cruz. For beginning to advanced users and programmers. Demos, reviews, solutions and classes on commercial, shareware and public domain programs. Spe-

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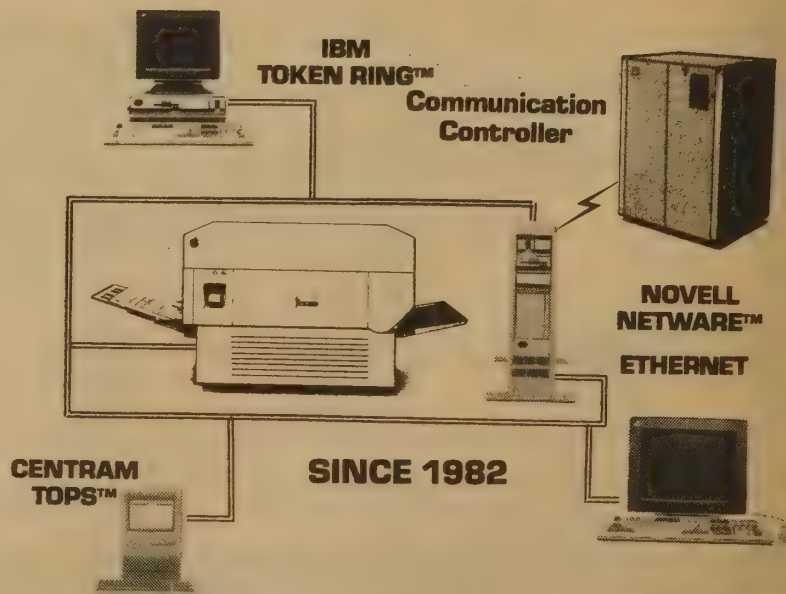
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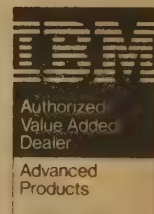
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San Francisco Computer Society. A CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

IBM Compatible User Group of Silicon Valley. Meets monthly to share information about IBM compatible or clone computers. BBS (408) 287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont, 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

Berkeley P.C. Users Group. Meets on the 2nd Monday of each month, 7:00 pm, at 2618 Telegraph Avenue, Berkeley. For more info, contact Mel Mann, 1145 Walnut Street, Berkeley, CA 94707, (415) 527-2177 or Andy Wong, 2618 Telegraph Ave., Berkeley, CA (415) 845-4814.

IBM AT/XT Clone Users Group. Meets second Monday of every month, 7:00-9:00 pm, at Bldg. 'E', room 287, Fort Mason Center in San Francisco. \$25 annual membership includes newsletter. Group focuses on clone hardware and support. Contact Philip James, P.O. Box 15000/324, San Francisco, CA 94115. Voice: 861-9321. BBS: (415) 552-9070.

Mid-Peninsula IBM PC Club. For IBM employees only. Con-

tact George Halle (415) 855-3474 or Scott Maiden (415) 855-4509.

SACTO PCjr Group. Meets on the 4th Tuesday of each month at SMUD Bldg., 59th and Folsom Blvd., Sacramento, at 7:15pm.

CADVANTAGE - Cadvance Users Group. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/22/87, 10/21/87, 1/20/88, 7:00pm to 10:00pm. PC CADD for architectural/facility designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

BAYPUG-Bay Area P-CAD Users Group. Meets P-CAD 1290 Parkmoor, San Jose. 7/30/87, 10/29/87, 1/28/88, 9:00am to 1:00pm. PC CADD for PCB/CAE Designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

The Blacksmiths-ANVIL 1000 MD Users. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/15/87, 10/14/87, 1/13/88, 7:00pm to 10:00pm. PC CADD for Mechanical Drafting and Engineering designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

Stanford/Palo Alto PC Users Group. Meets last Wednesday of the month at 8:00 pm, Polya Hall, Turing Auditorium (Room 111), Stanford.

The IBM & Compatibles User Group (ICUG). A mail based group which has a monthly newsletter. Not for PCjr's. Large public domain software library, with great bargains. Members communicate through newsletter. \$5.00/yr. fee. It's Worth It! Contact Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

Monterey Bay User Group IBM-PC (MBUG). Meets third Thursday of the month, 7:00 pm, at Seaside Library, 550 Harcourt Ave., Seaside, CA. Also Special Interest Groups meet every Wednesday, 7:00

pm, at 542 Archer St., Monterey, CA. A writer's SIG meets on the fourth Thursday of the month, 7:00 pm, at the Monterey Public Library, 625 Pacific St., Monterey. We have a large shareware library, annual auction and Christmas party. Contact Fred Brownell at (408) 373-6345.

KAYFUN: Peninsula Computer Club. Meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Supporting the MS-DOS & CP/M communities. Bimonthly newsletter, large CP/M and MS-DOS public domain libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

East Bay Users Group (EBUG). IBM, compatibles and clones. Meets 3rd Wednesday of the month (except August) at Merritt College Staff Lounge (R-7) Computer Lab, Merritt College, 12500 Campus Drive, Oakland 94619. Call (415) 436-2453 for more information.

KAYPRO

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:15 pm, at 846 Masonic, Albany, CA. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, \$10 per year to join. Contact Woody McPheeters, P.O. Box 20181, Oakland, CA 94620. (415) 548-3126. BBS: (415) 849-9389.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Bimonthly newsletter, large CP/M and MS-DOS public domain software libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group—informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont, 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

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Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

LEADING EDGE

Ventura County Leading Edge User Group. Meets 2nd Saturday of the month, 10:00 am, at Camerillo Library, 3100 Ponderosa Drive, Camarillo, CA. Contact Walt Yates at (805) 983-2199 for information.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler at P.O. Box 7816, Berkeley, CA 94707-0816.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings, one in conjunction with San Francisco Apple Core, and one in Concord. For meeting and current events information call (415) 771-5830. Recorded message 24-hours, live person sometimes during business hours. Leave name and address to receive information.

Berkeley Macintosh User Group (BMUG). 1442A Walnut St., #62, Berkeley, CA 94709. General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall on UCB campus. SIG meetings on Mondays, Tuesdays and Wednesdays. Call for more info and this week's topic. (415) 849-9114. BBS (415) 849-BMUG.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets

Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh Users Group (SMUG) meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUG for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

Club Mac of Monterey. Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter \$25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

Macs Of Marin. Macintosh users of Marin County. Both beginning and experienced users are welcome. Meetings: Room 104, Austin Science Building, College of Marin, 2nd Thursday of each month, 7:00 pm. Contact Steve Salzman, (415) 459-5707.

maCruzers, a Macintosh user's group, meets every second Wednesday of the month at Loudon Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker [foraker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megas of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

Association of Apple 32 Users. Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.

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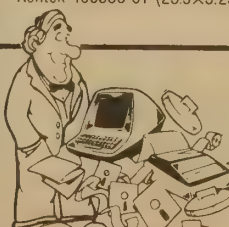
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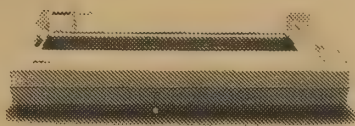
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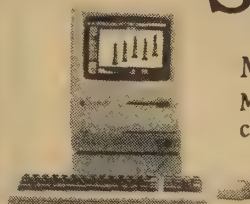
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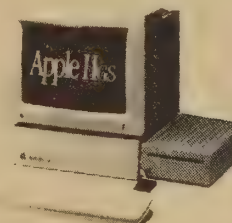
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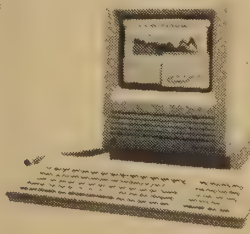
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BAMMSBUA: (San Francisco)
Bay Area Mac M.S. Basic Users Anonymous. A high-level users group devoted to the Microsoft dialect of BASIC for the Macintosh. Meets the second Tuesday of each month. For more information contact Ted Jones (415) 826-9239.

Mac Health User Group. For DentalMac, Medimac and Chiramac users, and interested others. To discuss ways to better use these billing and accounts receivable programs and the Macintosh in health-care practice. Meets at various times and locations. For more info, contact Robin Guess, 896 24th Avenue, San Francisco, CA 94121, (415) 387-3042.

Hellmans Open House. Meets every Tuesday 7 pm at 814 "E" St. San Rafael. Macintosh Network Games, Mazeware and Net-Trek. Bring your Mac and Appletalk cables if you have them. For more info call (415) 453-7924.

Christian Macintosh Users Group, Silicon Valley Chapter. Meets first Thursday of each month in Santa Clara. Newsletter and support hotline available. All user levels welcome. Call Rick Thrasher at (408) 437-1913.

MICROMATE

East Bay Micro-Mate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miller, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MICROPRO

Wordstar Users. Forming user group for Wordstar users. Please write to P.O. Box 1331, Menlo Park, CA 94025 or call (415) 325-4277.

MIDI

MIDI Applications Group. Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

MORROW

BAMBUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

SMUG (Stanford Morrow Users Group). Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont, 1920 Maciel Avenue, Santa Cruz, CA 94062, (408) 476-0504.

PETMUG — Petaluma Morrow Users Group. Meets Westamerica Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruit-

vale Avenues, Saratoga. Call (408) 371-8699 for further information.

NEC

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues \$20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

NOVELL

Novell User Group of Silicon Valley. A Novell user group forming. All those interested contact Robert J. Harrigan Jr. at 38 Corning Ave., Milpitas, CA 35035, (408) 263-0987.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter-First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

North Bay First Osborne Group. Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont, 1920 Maciel Avenue, Santa Cruz, CA 94062, (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

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PAPERBACK SOFTWARE

V-P Planner Special Interest Group. Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

PEACHTREE

Peachtree User Group. Peachtree users group forming. All those interested write for info. P.O. Box 20607, Oakland, CA 94620. Or call (415) 465-3570.

PICK

Northern California Pick Users. NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

PROLOG

Prolog. A SIG-Prolog is being formed. Interested? Call Jorge (415) 969-5045 or Dave (415) 368-8450 (evenings).

TPRO Users. A group formed for users of Turbo Prolog. Contact Kim Floyd, 3109 Scotts Valley Dr., Suite 138, Scotts Valley, CA 95066, (408) 867-3438 x27. BBS: (408) 438-6506.

R2E

North Bay R2E Forming user group for R2E System micro-computer users. Please call (415) 235-1598 for information.

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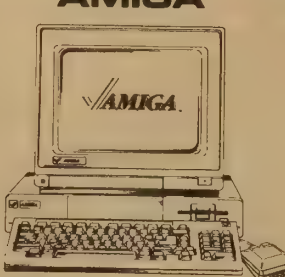
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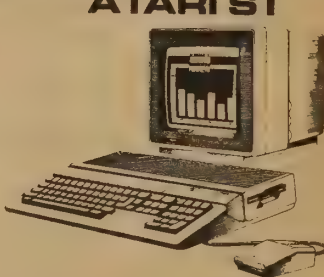
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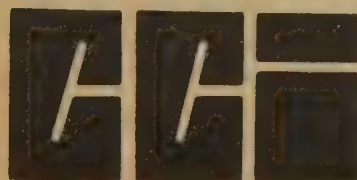
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this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybbblers. All Tandy computers including MS-DOS (IBM Compatibles). SIG's include laptops, CoCo's, Mod 1,3,4, Mod 2, 12, 16, 6000 and MS-DOS. Access to a variety of Public Domain software. Education modules, "problem solving" peripheral committee. Meets at Chabot College (Rooms 600 & 1564) 2nd Friday, 8 pm. Write TRS-Nybbblers, Chabot College, 25555 Hesperian Blvd., Hayward, CA 94545. Attn Mel Edwards. Call B.B. Jarvis (415) 846-3575.

Bay Area Chapter of the California Computer Federation, a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

South Bay TRS 80 Users Group (SBUG). Meets on the second Tuesday of the month, 7:15 pm, Saratoga Library. Contact Chris Oman, P.O. Box 60116, Sunnyvale, CA 94088. (408) 985-9460. BBS: (408) 249-8259.

San Mateo TRS-80 Users Group. Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF, 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

Byte Bandits of America. Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200, 24 hrs., free, (408) 374-3974.

Club 100. A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

United Computer Federation: San Francisco Chapter. Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

Sacramento COCO Club. Meets 3rd Saturday of the month, 7:00 pm, at the Four Seasons Restaurant. 65th and Folsom Blvd. Contact Bill Drennon at (916) 486-1594 or write P.O. Box 214733, Sacto, CA 95821-0733.

REALWORLD

Bay Area REALWORLD Users Group meets the third Tuesday of each month. For more information contact Mitch Paoiff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

ROYAL

Royal Alphontronic, San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

S-100

S-100 Bus Users Group. Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San

Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

SANYO

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate \$20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

SOUTHERN PACIFIC

ICOLATUG. User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

TEXAS INSTRUMENTS

San Francisco 99ers One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs available in library. Meetings 12 noon, third Saturday of the month, 3751 Elston Way, Oakland. Contact Gary L. Anderson, 24816 Mango St., Hayward, CA 94545, (415) 786-1776.

South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriques Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

Santa Clara Valley TI Pro User Group. Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

THEOS/OASIS

Theos/Oasis Users Bay Area Group. Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Usually meets 4th Thursday of the month at 7:30 pm, CALL FIRST FOR EXACT TIME AND PLACE. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3128 King St., Berkeley, CA 94703.

Timex/Sinclair Users of Silicon Valley (GUTS/SV) c/o Bill Miller, 6675 Clifford Drive, Cupertino, CA 95014-4530. 253-3175. SW library and newsletter. Meets every Saturday morning at 9:00 am at Stanford University, Jordan Hall (in the quadrangle), Math Building (number 380) in room 380C (downstairs). For topic check the PDSE (Public Domain Software Exchange) BBS in Sunnyvale at (408) 735-7390, 300/1200, 8-N-1, 24 hours, 32 lines (no waiting!).

Silicon Valley Timex/Sinclair User Group (SVTUG) Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

Silicon Valley Net. Meets every fourth Tuesday of the month, 7:30 pm, at 3000 Hanover, Palo Alto. SVNet presents speakers on topics of interest to UNIX users. Informal, technical setting where questions are welcome. Free of charge.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsmma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor User Group. San Francisco Bay Area Victor User's Group. Dues are \$30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact John Kimber at (415) 797-6423 or Bordin Moore at (415) 283-3285. Modem (415) 574-7914.

VTC-1050

VTC-1050 User's Group. Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353.

WORD PERFECT

Word Perfect of Santa Cruz. Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

Word Perfect SF PC UG. Meets on the first Monday of each month at 6:30 before general meeting at Fort Mason, Bldg. A, Rm. 5. Contact D. Wayne Smith at (415) 221-9166.

South Bay Word Perfect User Group. Call Martin Van Derpool, (408) 238-8434 for information.

ZENITH

Zenith User Group of San Francisco. Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm second Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

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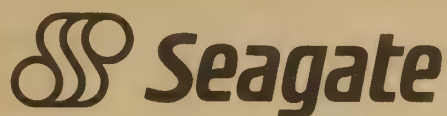
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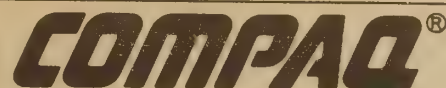
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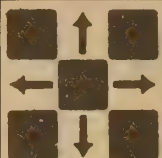
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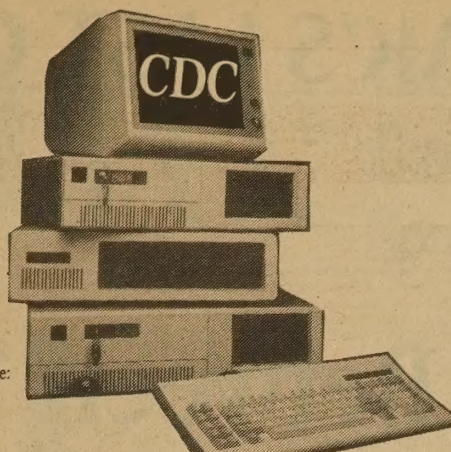
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Reading Between The Lines: *Intelligence Gathering In The Modern World And The Bill Gates Gospel*

By John C. Dvorak

Much of the gossip and inside stuff in this business is obtained through the old fashioned grapevine, whereby someone tells someone who tells someone who tells me. The best inside information, though, is researched.

I like to scan obscure periodicals and journals for interesting articles. The best of these periodicals, for this business, are the many users' group magazines. While many of the articles in a users' group publication are of a specialized nature, of interest only to the locals and members of the club, a few of the publications provide transcripts or overviews of speakers' talks. Some groups even sell fascinating tape recordings. Many illustrious industry types sometimes say things in front of a users' group that they would never tell the most dogged reporter.

Sometimes some wild assertions are made too. When these are exposed to the public at large, the truth quickly emerges as a reader comes forth and tells the real story. Needless to say, I love plowing through these transcripts.

This month I'm going to look at The New York PC Users Group and its nifty newsletter — one I recommend to all. Besides transcribing the guest speaker's talk (peppered with much-needed critical analysis) the magazine has a

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I guess somebody's got to do it.**

superb columnist, Pat Adams (aka deep disk) who will eventually find his way into the mainstream press if he wants to. He writes a gossip news/insiders column that specializes in baiting Ashton-Tate and, to a lesser degree, Lotus.

Recently, NYPC had Bill Gates as a speaker, and recently Microsoft invited NYPC and a slug of other users' groups to Washington State to propagandize them. The reports from the Washington meeting and the transcript from Gates revealed a number of fascinating comments.

Let me outline the most interesting quotes (in no particular order) and let's see what's up.

Bill Gates Quotes

On the 80386: "However, the 80386, which Microsoft had an influential role in, is not the final word. Intel is now working very closely with us to come up with a new instruction set processor that will go beyond the 80386."

Later he says, "I think Intel's done a great job. Its 80386 is a fantastic chip, and we have a very close relationship with Intel working on its next chip."

On IBM and OS/2 Gates says: "Microsoft was successful in convincing IBM that the key improvement needed was graphics capability, so the PS/2s incorporate high resolution graphics called VGA."

"I don't use the PC mouse at all."

"OS/2 error messages are very extensive; there's 100 times more error message text in OS/2 than there is in MS-DOS."

"When I partitioned the one megabyte memory space as 384K for dedicated things and 640K for general RAM, I didn't expect us to run out so quickly."

"There's no code in OS/2 that looks for the Micro Channel."

On the Macintosh and other developments: "We actually started our software development on the Macintosh over a year before the machine was introduced, and had more software people working on that project than even Apple did."

"We believe some of the central ideas of the Macintosh interface were fundamentally correct."

"We're working on a machine that produces full motion video with a quality better than your TV set."

Listening to this stuff I figure that pretty soon Gates will pull a Steve Jobs and say he invented the personal computer. Meanwhile, he's telling IBM, Apple and Intel how to do it right. I guess somebody's got to do it.

While Gates was obviously influential in the design of the original IBM PC with its cassette port and ROM MS-BASIC, it's interesting to talk to Bill Millard, former head of Computerland. Computerland was chosen by IBM to figure out what was wrong with the PC from the user's perspective. Apparently a lot of changes were made. When the PCjr, portable PC and other IBM clunkers came out, no such input was requested, so it is assumed that Microsoft and IBM showed their true abilities. I have never been able to determine what the original IBM PC was like before

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the Computerland suggestions. The cassette port and ROM-BASIC are an indication that it wasn't so hot.

But no matter; besides the constant self-congratulations, we do get some juicy tidbits here. Mainly that Intel is designing something totally new. Rumor has it that Intel (and Motorola) are designing some high speed RISC chips for the next generation of PCs. It will be important to have a lot of software for such a chip. Especially important and much needed will be emulation software so the thing can work like an 80386 too. Microsoft is a candidate for this project and it's logical that they'd have something to say to the chip designers. From the sound of it, though, Microsoft has a guy working at Intel.

The other interesting tidbit in amongst the quotes has it that Microsoft has hopes of reviving dead dreams of the home market. The company was heavily involved in a recent fizzle called MSX — the last great hope of the home market. Running Microsoft software and having a common bus, the MSX machines were last ditch Japanese Z-80's that were to attack the market right in the middle of the IBM PC phenomenon. The last I heard of it was a few years ago when a guy said, "MSX isn't dead. MSX-II is incredible and will save it." The guy who told me this is now a toll taker on the New Jersey Turnpike.

That's the fate of people who believe everything they are told by the honchos of large companies.

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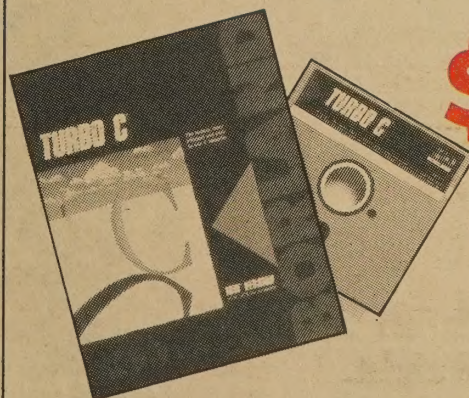
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